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     (FILE 'HOME' ENTERED AT 04:46:53 ON 22 SEP 2007)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 04:47:44 ON 22 SEP 2007
L1            48 S  ?BUTYLPHTHALIDE (P) DRUG?
L2             8 S L1 AND OIL?
L3            72 S  ?BUTYLPHTHALIDE (P) OIL?
L4             6 S L3 AND DELIVER?
L5             1 S L3 AND ADMINIS?
L6            41 S L3 AND ESSENTIAL OIL?
L7             0 S L6 AND THROMBOSIS
L8             0 S L6 AND ISCH?
L9             2 S L3 AND ISCH?
L10            0 S L3 AND THROMBOSIS
L11            2 S L3 AND INFLAMMA?
L12            0 S OIL? (P) ?CYCODEXTRIN?
L13            3 S  ?BUTYLPHTHALIDE (P) BIOAVAIL?
L14            7 S  ?BUTYLPHTHALIDE (P)STABIL?
L15            3 S  ?BUTYLPHTHALIDE (P) ABSORP?
L16            0 S  ?BUTYLPHTHALIDE (P) CARRIER?
L17           16 S  ?BUTYLPHTHALIDE (P) VEHICLE?
L18            0 S  ?BUTYLPHTHALIDE (P) INTRAVENEOUS
L19           17 S  ?BUTYLPHTHALIDE (P) IV
L20            4 S  ?BUTYLPHTHALIDE (P) I.V.
L21            5 S  ?BUTYLPHTHALIDE (P)  PHARMACOKINETICS
L22            4 S  ?BUTYLPHTHALIDE (P)  THROMBOSIS
L23            0 S  ?BUTYLPHTHALIDE (P) ISCHEM-INDUCED
L24           69 S  ?BUTYLPHTHALIDE (P) ISCHEM?
L25            0 S L24 AND PATIENT?
L26           14 S L24 AND ADMINIST?
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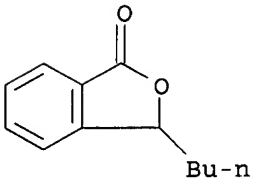
L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN
RN 6066-49-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN 1(3H)-Isobenzofuranone, 3-butyl- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Phthalide, 3-butyl- (6CI, 7CI, 8CI)
OTHER NAMES:
CN (±)-3-Butylphthalide
CN 3-Butyl-1(3H)-isobenzofuranone
CN 3-Butylphthalide
CN 3-n-Butylphthalide
CN Butylphthalide
DR 93133-67-6
MF C12 H14 O2
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, DDFU, DRUGU, EMBASE, IPA, MEDLINE, NAPRALERT, PROUSDDR, RTECS*, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

285 REFERENCES IN FILE CA (1907 TO DATE)
7 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
288 REFERENCES IN FILE CAPLUS (1907 TO DATE)
6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:645782 CAPLUS
DOCUMENT NUMBER: 143:404697
TITLE: Quality assessment of celeriac juices using enantioselective flavor analysis
AUTHOR(S): Greule, M.; Mosandl, A.; Kreck, M.; Dietrich, H.
CORPORATE SOURCE: Institut fuer Lebensmittelchemie, Johann Wolfgang Goethe-Universitaet, Frankfurt/Main, D-60439, Germany
SOURCE: Deutsche Lebensmittel-Rundschau (2005), 101(5), 199-204
CODEN: DLRUAJ; ISSN: 0012-0413
PUBLISHER: Wissenschaftliche Verlagsgesellschaft mbH
DOCUMENT TYPE: Journal
LANGUAGE: German
AB Juices were made from the celeriac breeds Monarch and Bergers weisse Kugel and qual. and quant. flavor changes during juice production were investigated. 3-Butylphthalide enantiomers were identified by capillary gas chromatog. using heptakis(2,3-di-O-methyl-6-tert-butyldimethylsilyl)-β-cyclodextrin (DiMe-β-CD) and heptakis(2,3-di-O-acetyl-6-O-tert-butyldimethylsily)-β- cyclodextrin (DiAc-β-CD) as the chiral stationary phase. The elution order of 3-Butylphthalide enantiomers on DiMe-β-CD is (3R)(I), (3S)(II); using DiAc-β-CD as the chiral selector the chromatog. behavior is inverted to be (3S)(I), (3R)(II). The enantiomeric distribution of 3-butylphthalide gives coherent reasons for the lower flavor quality of the breed Bergers weisse Kugel. The fragmentation of 3-butylphthalide by GC/MS-MS is discussed.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:376513 CAPLUS
DOCUMENT NUMBER: 141:397170
TITLE: Inclusion complex of 3-butylphthalide with cyclodextrin or its derivative, its preparation and pharmaceutical applications
INVENTOR(S): Niu, Zhanqi; Zhao, Kai; Liu, Wenjuan; Zhou, Guirong; Liu, Chao; Wang, Rongduan; Wan, Hongzhong; Liu, Yingfa; Bai, Min; Zhang, Yong
PATENT ASSIGNEE(S): Pharmaceutical Technology Development Co., Ltd., Shijiazhuang Pharmaceutical Group, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 11 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
CN 1394880	A	20030205	CN 2002-123000		20020617
PRIORITY APPLN. INFO.:			CN 2002-123000	A	20020617
			CN 2001-129441		20010618

AB The inclusion complex of 3-butylphthalide with cyclodextrin (CD) or its derivative, such as hydroxyethyl-β-CD, hydroxypropyl-β-CD, di(hydroxypropyl)-β-CD, methyl-β-CD, and gluco dextrin, is prepared by dissolving CD or its derivs. in proper solvent, such as water and ethanol, to receive a 5-60 % solution, followed by introducing 3-butylphthalide into the solution The inclusion complex can be used for preparing liquid or solid medicines, such as transfusion, injection, oral solution, syrup, tablet, capsule, and granule. Thus, 3-butylphthalide was mixed with aqueous solution of hydroxypropyl-β-CD till the solution became clear.

L3 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:182858 CAPLUS
DOCUMENT NUMBER: 140:223312
TITLE: Clathrates of butylphthalide with cyclodextrin or its derivatives, a process for their preparations and the use there of
INVENTOR(S): Niu, Zhan-Qi; Zhao, Kai; Liu, Wen-Juan; Zhou, Gui-Rong; Liu, Chao; Wang, Rong-Duan; Yuan, Hong-Zhong; Guo, Wen-Min; Yan, Sui-Chao; Bai, Min
PATENT ASSIGNEE(S): Zhongqi Pharmaceutical Technology (Shijiazhuang) Co., Ltd., Peop. Rep. China
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004018444	A1	20040304	WO 2002-CN579	20020821
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2494157	A1	20040304	CA 2002-2494157	20020821
AU 2002327307	A1	20040311	AU 2002-327307	20020821
EP 1535916	A1	20050601	EP 2002-760059	20020821
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
BR 2002015848	A	20050621	BR 2002-15848	20020821
JP 2006500367	T	20060105	JP 2004-529646	20020821
RU 2285696	C2	20061020	RU 2005-107707	20020821
NO 2005000629	A	20050317	NO 2005-629	20050204
US 2006166931	A1	20060727	US 2005-524653	20050217
IN 2005MN00144	A	20070706	IN 2005-MN144	20050217

PRIORITY APPLN. INFO.: WO 2002-CN579 W 20020821

AB The present invention relates to the clathrates of butylphthalide, which is D,L-mixed or levorotatory, with cyclodextrin or its derivs., a process for their prepns. and the use thereof. In the invention, the butylphthalide is included with cyclodextrin or its derivs., preferred hydroxypropyl-β- cyclodextrin, to improve the water-solubility of butylphthalide, develop clin. solid or liquid formulation and so that the curing effect of butylphthalide can exhibit better. The clathrate, in which the mole ratio of butylphthalide and cyclodextrin or derivs. thereof is 1:1-10, can be used in preparing infusion, injection, injectable powder, orally liquid, syrup, tablets, granules, dispersible tablets and others.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:737590 CAPLUS
DOCUMENT NUMBER: 134:50795
TITLE: Comparison of different di-tert-butyldimethyl-silylated cyclodextrins as chiral stationary phases in capillary gas chromatography

AUTHOR(S): Beck, Thomas; Liepe, Jens-Michael; Nandzik, Jan; Rohn, Sascha; Mosandl, Armin
CORPORATE SOURCE: Institut fur Lebensmittelchemie, Biozentrum J. W. Goethe-Universitat, Frankfurt/Main, D-60439, Germany
SOURCE: Journal of High Resolution Chromatography (2000), 23(10), 569-575
CODEN: JHRCE7; ISSN: 0935-6304
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Separation factors and thermodn. data for the separation of various chiral analytes on different di-O-tert-butyldimethyl-silylated cyclodextrin derivs. are collected and described. Modifying the substitution pattern of the tert-butyldimethylsilyl group in position 2 and 3 or changing from β- to γ- cyclodextrin significantly affects the separation properties of the cyclodextrin derivs.
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:147473 CAPLUS
DOCUMENT NUMBER: 124:305974
TITLE: Comparison of different 6-tert-butyldimethyl-silylated cyclodextrins as chiral stationary phases in GC
AUTHOR(S): Maas, Birgit; Dietrich, Armin; Mosandl, Armin
CORPORATE SOURCE: Inst. Lebensmittelchemie, J. W. Goethe-Universitaet, Frankfurt, D-60439, Germany
SOURCE: Journal of Microcolumn Separations (1996), 8(1), 47-56
CODEN: JMSEEJ; ISSN: 1040-7685
PUBLISHER: Wiley
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Separation factors and thermodn. data for the separation of various chiral analytes on different 6-TBDMS-derivatized γ(β)- cyclodextrin -phases were collected and discussed. Modifying the alkyl chain length of the substituents in position 2, and 3 of the cyclodextrin mol. or changing from β to γ-CD affects the separation properties extremely, whereas changing the chain length of acyl groups in position 2 and 3 hardly influences enantioselectivity.

L3 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:451630 CAPLUS
DOCUMENT NUMBER: 123:131654
TITLE: Di-tert-butyldimethylsilylated cyclodextrins as chiral stationary phases: thermodynamic investigations
AUTHOR(S): Maas, Birgit; Dietrich, Armin; Beck, Thomas; Boerner, Susanne; Mosandl, Armin
CORPORATE SOURCE: Inst. Lebensmittelchemie, Biozentrum J. W. Goethe-Univ. Marie-Curie-Str. 9, Frankfurt/Main, D-60439, Germany
SOURCE: Journal of Microcolumn Separations (1995), 7(1), 65-73
CODEN: JMSEEJ; ISSN: 1040-7685
PUBLISHER: Wiley
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thermodn. data, which are derived from measurements of separation factors at different temps. for various chiral compds., show some expected, but also some surprising effects concerning the mechanism of chiral recognition for the cyclodextrin derivs. studied.

L4 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:416262 CAPLUS
DOCUMENT NUMBER: 146:468505
TITLE: New dripping pill formulation of butylphthalide with improved stability and bioavailability
INVENTOR(S): Zhou, Guirong; Li, Yunli; Sun, Jianhua; Meng, Chengjun; Guo, Wenmin; Liang, Yali; Yang, Hanyu
PATENT ASSIGNEE(S): Shijiazhuang Pharmaceutical Group Zhongqi Pharmaceutical Technology (Shijiazhuang) Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 15pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1943571	A	20070411	CN 2005-10136358	20051224
WO 2007073682	A1	20070705	WO 2006-CN3531	20061222

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: CN 2005-10136358 A 20051224
AB The invention provides a new dripping pill formulation of butylphthalide with improved stability and bioavailability. The dripping pill is composed of (by weight%) butylphthalide 5-30, matrix 60-85, dispersing agent 2-15, and coating material 1-4. The matrix can be PEG 4,000, PEG 6,000, PEG 20,000, or poloxamer. The dispersing agent can be pulverized silica gel, and/or crosslinking polyvinylpyrrolidone. The coating material can be hydroxypropyl methylcellulose, hydroxypropyl cellulose, ethylcellulose, or eudragit E30D. The dripping pill has the advantages of high stability and bioavailability, shortened production period and low cost.

L4 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1049518 CAPLUS
DOCUMENT NUMBER: 145:383578
TITLE: Method for manufacturing injection emulsion containing n-butylphthalide for treating cardiovascular disease
INVENTOR(S): Gao, Chunping
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 6pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1839824	A	20061004	CN 2006-10012342	20060118

PRIORITY APPLN. INFO.: CN 2006-10012342 20060118

AB The title injection emulsion is composed of n-butylphthalide, oil, surfactant, isotonic regulating agent and water at a weight ratio of 1:(1-100):(1-50):(1-20):(50-70). The title method comprises: (1) adding surfactant and isotonic regulating agent in water to obtain water phase mixture, (2) adding n-butylphthalide, surfactant and stabilizing agent in oil, heating to 60-90°C to obtain a clear oil phase mixture, and (3) dispersing the oil phase mixture obtained in step 2 in the water phase mixture obtained in step 1, stirring with high speed, and emulsifying. The injection emulsion has the advantages of no anaphylaxis, low side effect, high bioavailability, good stability, uniform particle size, good therapeutic effect, and simple manufacture process.

L4 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:936321 CAPLUS
DOCUMENT NUMBER: 145:321671
TITLE: Manufacture and application of butylphthalide intravenous emulsion
INVENTOR(S): Zhao, Chunshun; Feng, Mingfang
PATENT ASSIGNEE(S): Sun Yat-Sen University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 14pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1823729	A	20060830	CN 2005-10102355	20051216
WO 2007068212	A1	20070621	WO 2006-CN3434	20061215

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: CN 2005-10102355 A 20051216
AB The title emulsion (particle size = 10-2000 nm) comprises (by weight%) butylphthalide or its derivs. 0.01-50 and auxiliary materials 50-99.99. The auxiliary materials are composed of oil, emulsifier, stabilizer, isotonizing agent and injection water. The emulsion can conceal the special odor of butylphthalide and improve the solubility and stability of butylphthalide, thus improving the bioavailability. The emulsion can enhance the targeting of butylphthalide to brain tissues and reduce the toxicity and side effects of butylphthalide.

L4 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:777587 CAPLUS
DOCUMENT NUMBER: 145:255676
TITLE: In vivo and in vitro evaluation of essential oils from Ligusticum chuanxiong HORT on the transdermal delivery of flurbiprofen in rabbits
AUTHOR(S): Zhang, Li-Chao; Hu, Jin-Hong; Li, Ling; Gao, Li-Hong; Zhu, Quan-Gang; Li, Zhen; Wang, Zhong-Zhuang; Su, Ding-Feng
CORPORATE SOURCE: Department of Pharmacy, Changhai Hospital, Second Military Medical University, Shanghai, 200433, Peop. Rep. China

SOURCE: Biological & Pharmaceutical Bulletin (2006), 29(6), 1217-1222
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The present study was designed to evaluate skin permeation enhancement effect of essential oils from Ligusticum chuanxiong HORT (chuanxiong oil) in rabbits and to compare the in vivo absorption and in vitro permeation using flurbiprofen as a model drug. In vivo results demonstrated that chuanxiong oil showed a rapid and marked permeation enhancement effect. The group with 10% oil exhibited the highest value of area under the curve (AUC) of 418±124 μg/mL·h, which was 2.43 times the high of control. The AUC value of 3% oil group (245±81.6 μg/mL·h) was similar to that of 5% oleic acid group (235±74.5 μg/mL·h). Whereas in vitro results indicated the enhancement of chuanxiong oil was relatively weak. The group with 3% oil appeared to the highest flurbiprofen flux (84.9±19.3 μg/cm2/h), to some extent lower than 5% oleic acid group (107±5.85 μg/cm2/h). At 10% and 15% concns., chuanxiong oil even decreased the flux of flurbiprofen compared with the control. Both in vitro results with pretreated skin and flurbiprofen content accumulated in skin indicated the potential mechanism for the in vitro enhancement of chuanxiong oil was the weakened barrier function by improving in the partitioning of flurbiprofen to the stratum corneum. The discrepancy was noted between the in vivo and in vitro results, indicating only about the weakened barrier function was not enough to explain the sharply increment of in vivo absorption of flurbiprofen by chuanxiong oil. The GS-MS results indicated phthalides identified from chuanxiong oil might mainly contribute to enhance in vivo absorption of flurbiprofen because of its large quantities (91.15%).
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 50 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2002275804 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12016907
TITLE: Effect of dl-3-N-butylphthalide on the expression of hsp70 mRNA and c-fos in transient cerebral ischemic and reperfused rat brain.
AUTHOR: Xiong J; Feng Y
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050.
SOURCE: Yao xue xue bao = Acta pharmaceutica Sinica, (1998 Jun) Vol. 33, No. 6, pp. 401-6.
Journal code: 21710340R. ISSN: 0513-4870.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200212
ENTRY DATE: Entered STN: 18 May 2002
Last Updated on STN: 2 Jan 2003
Entered Medline: 31 Dec 2002

AB Transient cerebral ischemia may cause striking changes in gene expression in rat brain. The induction of heat shock protein 70 (hsp70) mRNA is considered to be an important marker of cerebral ischemia injury, and c-fos may upregulate the expression of other genes related to the secondary injuries. dl-3-n-Butylphthaline(NBP) had been shown to have good anti-cerebral ischemic effect. Using the in situ hybridization and Northern blot technique, the effect of NBP on the expression of hsp70 mRNA and c-fos in transient middle cerebral artery occlusion (MCAo) rat caused by intraluminal thread was studied, and found that the expression of hsp70 mRNA was at the lesioned site at 1 h of reperfusion. It increased gradually with the duration of reperfusion time and peaked at 12 h at the lesioned site. With NBP treatment(i.p. 10 mg.kg-1 10 min before ischemia or 20 mg.kg-1 after ischemia), the expression of hsp70 mRNA attenuated significantly. For c-fos, the expression appeared at 0.5 h of reperfusion, peaked at 3 h, and decreased at 6 h. NBP pretreatment (10 mg.kg-1 10 min before ischemia) also decreased the c-fos expression. The same results were obtained with Northern blot technique. Since NBP had been shown to have good anti-cerebral ischemic effects, the attenuating effect on gene expression seemed to be the secondary effect after the alleviation of tissue injury.

L7 ANSWER 51 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2002047738 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11776030
TITLE: dl-3-n-butylphthalide reduces brain damage in mice with closed head injury.
AUTHOR: Chong Z; Feng Y
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences, Peking Union of Medical College, Beijing 100050, China.
SOURCE: Chinese medical journal, (2000 Jul) Vol. 113, No. 7, pp. 613-6.
Journal code: 7513795. ISSN: 0366-6999.
PUB. COUNTRY: China
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200202
ENTRY DATE: Entered STN: 25 Jan 2002

Last Updated on STN: 23 Feb 2002
Entered Medline: 22 Feb 2002

AB OBJECTIVE: To investigate the protective effect of dl-3-n-butylphthalide (NBP) as an anti-cerebral ischemic drug on brain damage 24 h after closed head injury in mice. METHODS: Closed head injury was induced by dropping a 50-g weight from a height of 18 cm on a metal impounder resting on the parietal bone in mice. RESULTS: The neurotraumatic model induced impairment of memory function, significant cerebral edema, and disruption of the blood-brain barrier. dl-3-n-butylphthalide (50 mg.kg-1) given intraperitoneally 5 minutes and 60 minutes after the onset of closed head injury was found to attenuate the impairment of memory function ($P < 0.05$), alleviate brain edema in the injured cerebral cortex ($P < 0.05$), and reduce extravasation of plasma protein bound to Evans blue dye by 63.5% ($P < 0.01$). NBP was also shown to increase the activity of choline acetyltransferase in the injured cortex to 0.83 +/- 0.21 ng.min-1.mg-1 ($P < 0.01$, compared with 0.48 +/- 0.14 ng.min-1.mg-1 of vehicle group). CONCLUSION: NBP provides therapeutic response in experimental closed head injury.

L7 ANSWER 52 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2002010291 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11372450
TITLE: Effects of 3-N-butylphthalide on cortical calcineurin and calpain activities in focal cerebral ischemia rats.
AUTHOR: Dong G X; Feng Y P
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050, China.
SOURCE: Yao xue xue bao = Acta pharmaceutica Sinica, (2000 Oct) Vol. 35, No. 10, pp. 790-2.
Journal code: 21710340R. ISSN: 0513-4870.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200210
ENTRY DATE: Entered STN: 21 Jan 2002
Last Updated on STN: 23 Oct 2002
Entered Medline: 22 Oct 2002

AB AIM: To explore if the inhibitory effect of 3-n-butylphthalide(NBP) on apoptosis induced by transient focal cerebral ischemia in rats is relevant to cortical calcineurin and calpain activities. METHODS: The model of cerebral ischemia-reperfusion was used. The activities of the two enzymes were measured by using biochemical methods. RESULTS: DL-NBP and D-NBP 20 mg.kg-1 were found to significantly reduce ischemia ipsilateral cortical calcineurin and calpain activities. However, L-NBP 20 mg.kg-1 showed no obvious effect. CONCLUSION: The anti-apoptotic effect of NBP may be relevant to its inhibition of calcineurin and calpain activities in focal cerebral ischemia rats.

L7 ANSWER 53 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2001549847 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11596286
TITLE: A study on the metabolites of dl-3-n-butyphthalide in rats.
AUTHOR: Wang C H; Feng Y P; Wu Y L
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Science and Peking Union Medical College, Beijing 100050.
SOURCE: Yao xue xue bao = Acta pharmaceutica Sinica, (1997 Sep) Vol. 32, No. 9, pp. 641-6.
Journal code: 21710340R. ISSN: 0513-4870.

PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200112
ENTRY DATE: Entered STN: 15 Oct 2001
Last Updated on STN: 24 Jan 2002
Entered Medline: 31 Dec 2001

AB The metabolites of dl-3-n-butylphthalide(NBP), a novel drug with promising protective action against cerebral ischemia, was studied in rats. Two main in vitro metabolites of NBP, M I and M II, were isolated and purified from rat liver microsome incubating system by using HPLC. The structure elucidation was mainly accomplished by spectral studies(UV, 1H-NMR, MS). Within 24 h following i.g. 3H-NBP, the total radioactivity excreted in urine and feces was 73.7% of the dose. Comparing with previous study, within 72 h following i.g. NBP, the total prototype drug excreted in urine and feces was 2.53% of the dose. This result excludes the possibility that NBP accumulates in vivo. The urine and brain homogenate of the rats(i.g. 3H-NBP) were analyzed by TLC. M I and M II were found in urine and M I was found in brain only. Furthermore, the ratio of radioactive M I to proptype drug was 1:1 in rat brain within 1 h following i.g. 3H-NBP. So, M I and M II were supposed to be the two main in vivo metabolites of NBP and M I might be an active metabolite.

L7 ANSWER 54 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2001395200 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11324442
TITLE: Inhibitory effects of chiral 3-n-butylphthalide on inflammation following focal ischemic brain injury in rats.
AUTHOR: Xu H L; Feng Y P
CORPORATE SOURCE: Institute of Materia Medica, Peking Union Medical College & Chinese Academy of Medical Sciences, Beijing 100050, China.
SOURCE: Acta pharmacologica Sinica, (2000 May) Vol. 21, No. 5, pp. 433-8.
Journal code: 100956087. ISSN: 1671-4083.
PUB. COUNTRY: China
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200107
ENTRY DATE: Entered STN: 16 Jul 2001
Last Updated on STN: 30 Oct 2002
Entered Medline: 12 Jul 2001

AB AIM: To evaluate the degree of neutrophil infiltration into ischemic tissue after transient focal cerebral ischemia, and to examine the effects of chiral 3-n-butylphthalide (NBP) on this inflammatory process. METHODS: After a 24-h reperfusion following transient cerebral ischemia, two different techniques, histologic analysis and modified myeloperoxidase (MPO)-quantification method, were utilized to identify the infiltration of neutrophils into cerebral tissue following ischemia. The expression of intercellular adhesion molecule-1 (ICAM-1) and tumor necrosis factor-alpha(TNF-alpha) in the ischemic zone were observed by immunohistochemistry, Western blot, and in situ hybridization techniques. RESULTS: In cerebral cortex area perfused by middle cerebral artery (MCA), MPO activity was greatly increased after 24 h of reperfusion in the vehicle group, and it correlated well with the infiltration of neutrophils. Administration of dl-, d-, and l-NBP (20 mg.kg-1) partially inhibited both the increase in MPO activity and the appearance of neutrophils in ischemia-reperfusion sites. Up-regulation of

ICAM-1 was also observed on the microvessel endothelium in the ischemic territory. In addition, chiral NBP markedly blunted ICAM-1 expression, and decreased the number of TNF-alpha blue purple-positive neurons induced by ischemia-reperfusion injury. CONCLUSION: The results indicate that the increase in neutrophils infiltration into the infarct site implicated postischemic brain injury, and NBP was effective in protecting the ischemic sites following ischemic insult.

L7 ANSWER 55 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2001261409 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11324493
TITLE: Effect of dl-3-n-butylphthalide on brain edema in rats subjected to focal cerebral ischemia.
AUTHOR: Deng W; Feng Y
CORPORATE SOURCE: Institute of Materia Medica, CAMS & PUMC, Beijing 100050.
SOURCE: Chinese medical sciences journal = Chung-kuo i hsueh k'o hsueh tsa chih / Chinese Academy of Medical Sciences, (1997 Jun) Vol. 12, No. 2, pp. 102-6.
Journal code: 9112559. ISSN: 1001-9294.
PUB. COUNTRY: China
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200105
ENTRY DATE: Entered STN: 21 May 2001
Last Updated on STN: 21 May 2001
Entered Medline: 17 May 2001

AB The present study evaluated the effect of dl-3-n-butylphthalide(NBP), a novel brain protective agent, on brain edema in rats following focal ischemia. Edema was induced by occluding the right middle cerebral artery (MCAO), producing permanent focal ischemia in the right cerebral hemisphere, which developed ipsilateral brain edema reproducibly. Edema was assessed 24 h after MCA occlusion by determining the brain water content from wet and dry weight measurements, and the sodium, potassium concentrations with ion-selective electrodes. In this model, NBP at the dose of 80, 160 and 240 mg/kg p.o. 15 min after MCAO prevented from brain edema in a dose-dependent manner. A significant reduction of sodium content and an increase in potassium level were observed in all drug-treated groups. It showed that NBP strongly attenuated brain water entry, sodium accumulation and potassium loss. Nimodipine treatment (5 mg/kg s.c.) also reduced brain edema ($P < 0.05$). The results suggest that a strong anti-edema activity of NBP may play an important role to contribute to the treatment of ischemic damage.

L7 ANSWER 56 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2000142590 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10678100
TITLE: dl-3-n-butylphthalide attenuates reperfusion-induced blood-brain barrier damage after focal cerebral ischemia in rats.
AUTHOR: Chong Z Z; Feng Y P
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing, China.
SOURCE: Zhongguo yao li xue bao = Acta pharmacologica Sinica, (1999 Aug) Vol. 20, No. 8, pp. 696-700.
Journal code: 8100330. ISSN: 0253-9756.
PUB. COUNTRY: China
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200004

ENTRY DATE: Entered STN: 5 May 2000
Last Updated on STN: 5 May 2000
Entered Medline: 24 Apr 2000

AB AIM: To study the protective effect of dl-3-n-butylphthalide (NBP) on blood-brain barrier (BBB) damage induced by reperfusion following focal cerebral ischemia. METHODS: Focal cerebral ischemia in rats was performed by inserting a nylon suture into intracranial segment of internal carotid artery to block the origin of middle cerebral artery and reperfusion by withdrawing the nylon suture. Permeability of BBB was determined by extravasation of the protein-bound Evans blue dye to cerebral cortex and further evaluated by immunohistochemical or electronmicroscopic method. RESULTS: Reperfusion for 3 h following focal cerebral ischemia for 3 h produced BBB damage which exhibited the increase in extravasation in cerebral cortex, elevation of the expression of immunoglobulin (IgG), and pore formation in endothelial cell membrane of capillary in cerebral cortex. NBP (5-20 mg.kg-1) decreased the extravasation in a dose-dependent manner. The expression of IgG in cerebral cortex was decreased and the ultrastructure damage of capillaries was alleviated after treatment with NBP. NBP 20 mg.kg-1 also alleviated brain edema caused by 3-h reperfusion following 3-h middle cerebral artery occlusion (MCAO). CONCLUSION: NBP has protective effect on BBB damage induced by reperfusion after MCAO.

L7 ANSWER 57 OF 62 MEDLINE on STN
ACCESSION NUMBER: 1999302862 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10374632
TITLE: Effects of dl-3-n-butylphthalide on regional cerebral blood flow in right middle cerebral artery occlusion rats.
AUTHOR: Yan C H; Feng Y P; Zhang J T
CORPORATE SOURCE: Institute of Materia Medica, Peking Union Medical College, Chinese Academy of Medical Sciences, Beijing, China.
SOURCE: Zhongguo yao li xue bao = Acta pharmacologica Sinica, (1998 Mar) Vol. 19, No. 2, pp. 117-20.
Journal code: 8100330. ISSN: 0253-9756.
PUB. COUNTRY: China
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199907
ENTRY DATE: Entered STN: 6 Aug 1999
Last Updated on STN: 3 Mar 2000
Entered Medline: 23 Jul 1999

AB AIM: To study the effect of dl-3-n-butylphthalide (NBP) on regional cerebral blood flow (rCBF) in forcal cerebral ischemia rats. METHODS: In chloral hydrate-anesthetized rat, the proximal portion of right middle cerebral artery (RMCA) was occluded, and H2 needle electrode was implanted in right striatum. rCBF was monitored in striatum using hydrogen clearance method. RESULTS: Ten min after RMCA occlusion (RMCAO), NBP (5, 10, 20 mg.kg-1 i.p.) markedly increased rCBF to striatum ($P < 0.01$). When NBP was given i.p. 40 min after RMCAO, the increasing effect on rCBF was also observed ($P < 0.05$). However, when NBP was injected i.p. 60 min after RMCAO, the increasing effect of NBP on rCBF was not found. In NBP-pretreated (i.p. 40 min before RMCAO) group, rCBF in striatum measured at different time points of 30, 60, 90, 120, 150, and 180 min after RMCAO were increased by 97%, 107%, 136%, 211%, 173%, and 317%, respectively, compared with the percentages of vehicle group. The potency of the effect of Nim (0.5 mg.kg-1 i.p.) was similar to that of NBP (10 mg.kg-1 i.p.). CONCLUSION: NBP pre-treatment or post-treatment markedly enhanced the rCBF to striatum in RMCAO rats.

L7 ANSWER 58 OF 62 MEDLINE on STN
ACCESSION NUMBER: 1999256215 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10322905

TITLE: Effects of dl-3-n-butylphthalide on production of TXB2 and 6-keto-PGF1 alpha in rat brain during focal cerebral ischemia and reperfusion.
AUTHOR: Chong Z Z; Feng Y P
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing, China.
SOURCE: Zhongguo yao li xue bao = Acta pharmacologica Sinica, (1997 Nov) Vol. 18, No. 6, pp. 505-8.
Journal code: 8100330. ISSN: 0253-9756.
PUB. COUNTRY: China
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199907
ENTRY DATE: Entered STN: 15 Jul 1999
Last Updated on STN: 3 Mar 2000
Entered Medline: 7 Jul 1999

AB AIM: To study the effects of dl-3-n-butylphthalide (NBP) on the changes of thromboxane B2 (TXB2) and 6-keto-PGF1 alpha (6-keto-PGF1 alpha) contents in hippocampus, striatum, and cerebral cortex of rats subjected to focal cerebral ischemia followed by reperfusion. METHODS: Focal cerebral ischemia was induced by inserting a nylon suture into intracranial segment of internal carotid artery from external carotid artery and blockade of the origin of middle cerebral artery. For reperfusion, the suture was pulled out to restore the blood flow to the ischemic brain. Determination of TXB2 and 6-keto-PGF1 alpha was performed by RIA method. RESULTS: Reperfusion following focal cerebral ischemia resulted in increases in TXB2 at 5 min and 6-keto-PGF1 alpha at 30 min and a decrease in the ratio of epoprostenol (PGI2)/thromboxane A2 (TXA2) (6-keto-PGF1 alpha/TXB2) at 5 min in hippocampus, striatum, and cerebral cortex. NBP 10 mg.kg-1 reduced the content of TXB2 without decreasing effect on 6-keto-PGF1 alpha. NBP 20 mg.kg-1 reduced both TXB2 and 6-keto-PGF1 alpha in lesser extent than aspirin (Asp, 20 mg.kg-1). NBP 20 or 10 mg.kg-1 elevated the ratio of PGI2/TXA2 after reperfusion, but Asp 20 mg.kg-1 did not increase the ratio except in striatum at 5 min after reperfusion. CONCLUSION: NBP increases the ratio of PGI2/TXA2 which may have beneficial effects on the impaired microcirculation in postischemic brain tissues.

L7 ANSWER 59 OF 62 MEDLINE on STN
ACCESSION NUMBER: 97352366 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9208646
TITLE: Effect of dl-3-butylphthalide on the striatum extracellular amino acid and dopamine contents in the rat during cerebral ischemia.
AUTHOR: Huang X X; Hu D; Qu Z W; Zhang J T; Feng Y P
CORPORATE SOURCE: Department of Pharmacology, Institute of Materia Medica, Chinese Academy of Medical Sciences, Beijing.
SOURCE: Yao xue xue bao = Acta pharmaceutica Sinica, (1996) Vol. 31, No. 4, pp. 246-9.
Journal code: 21710340R. ISSN: 0513-4870.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199708
ENTRY DATE: Entered STN: 13 Aug 1997
Last Updated on STN: 3 Mar 2000
Entered Medline: 4 Aug 1997

AB The effect of dl-3-butylphthalide (NBP) on the contents of amino acids and dopamine in the rat striatum during globe cerebral ischemia has been studied. By using the technique of microperfusion in the striatum of

rats subjected to 4-vessel occlusion cerebral ischemia, the extracellular contents of glutamate, taurine, gamma-aminobutyric acid and dopamine were found to be significantly increased in the striatum during the 20 min of cerebral ischemia. NBP (40 mg.kg-1; i.p. 30 min before ischemia) was shown to reduce the contents of dopamine and its metabolite, 3,4-dihydroxyphenylacetic acid (DOPAC), in the striatal extracellular fluid of the rat during ischemia. The content of glycine before and after ischemia was also reduced. However, no significant effect on the contents of glutamate and some other amino acids was observed. The results suggest that NBP may improve the striatal ischemic injury.

L7 ANSWER 60 OF 62 MEDLINE on STN
ACCESSION NUMBER: 96332044 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8712015
TITLE: Protective effect of dl-3-n-butylphthalide on ischemic neurological damage and abnormal behavior in rats subjected to focal ischemia.
AUTHOR: Liu X G; Feng Y P
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences, Peking Union Medical College, Beijing, China.
SOURCE: Yao xue xue bao = Acta pharmaceutica Sinica, (1995 Dec) Vol. 30, No. 12, pp. 896-903.
Journal code: 21710340R. ISSN: 0513-4870.
PUB. COUNTRY: China
DOCUMENT TYPE: (COMPARATIVE STUDY)
(ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199609
ENTRY DATE: Entered STN: 19 Sep 1996
Last Updated on STN: 19 Sep 1996
Entered Medline: 12 Sep 1996

AB dl-3-n-Butylphthalide (NBP) was known to have improving effect on brain energy metabolism after ischemia insult. The purpose of this study is to determine if the drug has protective action against ischemic neuronal damage. In the present study, the effect of NBP on cerebral infarction and neurological deficits after middle cerebral artery occlusion (MCAO) in rats was investigated. Focal cerebral ischemia was produced by permanent occlusion of the proximal portion of the right middle cerebral artery (MCA) according to the technique of Tamura. The infarct area was measured by 2,3,5-triphenyltetrazolium chloride (TTC) staining technique. The extent of neurological deficits was evaluated by the method of Bederson. The histological changes in neuronal change after MCAO in rats were also studied. The results indicate that the infarct area and the score of neurological deficits after MCAO were reduced significantly following intraperitoneal pretreatment or pre- and post-treatment with NBP 20 mg . kg-1. The treatment with NBP 10 or 20 mg . kg-1(i.p.), or 20,40 or 80 mg . kg-1 (po) 15 min and even 2 h (20 mg . kg-1, i.p.) after MCAO also markedly reduced the infarct area and the score of neurological deficits. However, no effect was found when NBP (20 mg . kg-1) was injected intraperitoneally 4 h after MCAO. MK-801 (0.5 mg . kg-1, i.p.), a non-competitive antagonist of NMDA receptor, significantly reduced the size of infarction and the score of neurological deficits in rats subjected to MCAO. The potency of NBP in reducing the infarct area and neurological deficits was found to be quite similar to that of MK-801 (0.5 mg . kg-1, i.p.). No neuroprotective effect of nimodipine (1.0 mg . kg-1, sc) was found. Generally, the potency of NBP in protecting rats from ischemic neurological damage is equal to that of MK-801 and is more powerful than that of Nimodipine. Side effects of NBP in behavior was not found. Therefore, NBP seems to be a hopeful drug for the

treatment of stroke.

L7 ANSWER 61 OF 62 MEDLINE on STN
ACCESSION NUMBER: 96296536 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8701729
TITLE: Effect of DL-butylphthalide (NBP) on mouse brain energy metabolism in complete brain ischemia induced by decapitation.
AUTHOR: Feng Y P; Hu D; Zhang L Y
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing.
SOURCE: Yao xue xue bao = Acta pharmaceutica Sinica, (1995) Vol. 30, No. 10, pp. 741-4.
Journal code: 21710340R. ISSN: 0513-4870.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199609
ENTRY DATE: Entered STN: 12 Sep 1996
Last Updated on STN: 3 Mar 2000
Entered Medline: 3 Sep 1996
AB The effects of NBP on gasping and brain energy metabolism after complete brain ischemia in mice subjected to decapitation were investigated. The levels of ATP, phosphocreatine (PCr) and lactate were determined by the method of Lowry. The data indicated that NBP at 112.5 or 250 mg.kg-1 sc can significantly prolong the duration of gasping and at the dose of 150 or 200 mg.kg-1 sc reduce the level of lactate and increase the levels of ATP and PCr after complete brain ischemia. The results suggest that NBP may have brain protective action and improve ischemic brain energy metabolism.

L7 ANSWER 62 OF 62 MEDLINE on STN
ACCESSION NUMBER: 96286743 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8762458
TITLE: Effect of dl-3-n-butylphthalide (NBP) on purine metabolites in striatum extracellular fluid in four-vessel occlusion rats.
AUTHOR: Hu D; Huang X X; Feng Y P
CORPORATE SOURCE: Department of Pharmacology, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing.
SOURCE: Yao xue xue bao = Acta pharmaceutica Sinica, (1996) Vol. 31, No. 1, pp. 13-7.
Journal code: 21710340R. ISSN: 0513-4870.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199610
ENTRY DATE: Entered STN: 6 Nov 1996
Last Updated on STN: 3 Mar 2000
Entered Medline: 23 Oct 1996
AB The effects of NBP on concentrations of some purine metabolites in extracellular fluid of rat striatum during global ischemia and reperfusion were studied. Global ischemia was produced by the four-vessel occlusion method. Push-pull cannula was implanted stereotaxically into the striatum of rat and was perfused with Ringer's solution at a flow rate of 2.5 microliters.min-1. The level of adenosine(Ade), inosine(Ino), hypoxanthine(Hyp) and xanthine(Xan) in perfusates were measured with HPLC connected with a UV detector. The results indicate that the levels of ade, ino, hyp and xan were

significantly increased (about 3-5 times of initial value) during cerebral ischemia and reperfusion. NBP at the dose of 20 or 40 mg.kg-1 given intra-peritoneally 20 min before ischemia was shown to depress the increase of ade, ino, hyp and xan during ischemia and reperfusion dose dependently. But no change in the level of purine metabolites was found in sham operated rats. It has been known that harmful free radicals were produced when xan and uric acid were formed by xanthine oxidase during reperfusion. This might be important for the development of ischemic injuries. Our findings suggest that the effect of NBP might be beneficial for protection against post-ischemic neuronal damage.

L7 ANSWER 35 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:563571 CAPLUS
DOCUMENT NUMBER: 127:215120
TITLE: Effect of DL-3-N-butylphthalide on brain edema in rats subjected to focal cerebral ischemia
AUTHOR(S): Deng, Wenbin; Feng, Yipu
CORPORATE SOURCE: Institute of Materia Medica, CAMS and PUMC, Beijing, 100050, Peop. Rep. China
SOURCE: Chinese Medical Sciences Journal (1997), 12(2), 102-106
CODEN: CMSJEP; ISSN: 1001-9294
PUBLISHER: Chinese Academy of Medical Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The present study evaluated the effect of dl-3-n-butylphthalide (NBP), a novel brain protective agent, on brain edema in rats following focal ischemia. Edema was induced by occluding the right middle cerebral artery (MCAO), producing permanent focal ischemia in the right cerebral hemisphere, which developed ipsilateral brain edema reproducibly. Edema was assessed 24 h after MCA occlusion by determining the brain water content from wet and dry weight measurements, and the sodium, potassium concns. with ion-selective electrodes. In this model, NBP at the dose of 80, 160 and 240 mg/kg po 15 min after MCAO prevented from brain edema in a dose-dependent manner. A significant reduction of sodium content and an increase in potassium level were observed in all drug-treated groups. It showed that NBP strongly attenuated brain water entry, sodium accumulation and potassium loss. Nimodipine treatment (5mg/kg s.c.) also reduced brain edema ($P<0.05$). The results suggest that a strong anti-edema activity of NBP may play an important role to contribute to the treatment of ischemic damage.

L7 ANSWER 36 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:3158 CAPLUS
DOCUMENT NUMBER: 126:42602
TITLE: Effect of DL-3-n-butylphthalide on the striatum extracellular amino acid and dopamine contents in the rat during cerebral ischemia
AUTHOR(S): Huang, Xinxiang; Hu, Dun; Qu, Zhiwei; Zhang, Juntian; Feng, Yipu
CORPORATE SOURCE: Institute Materia medica, Chinese Academy Medical Sciences, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1996), 31(4), 246-249
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Chinese Academy of Medical Sciences, Institute of Materia Media
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effect of DL-3-n-butylphthalide (NBP) on the contents of amino acids and dopamine in the rat striatum during global cerebral ischemia was studied. Using the technique of microperfusion in the striatum of rats subjected to 4-vessel occlusion cerebral ischemia, the extracellular contents of glutamate, taurine, γ-aminobutyric acid and dopamine were significantly increased in the striatum during the 20 min. of cerebral ischemia. NBP 40 mg kg-1, i.p. 30 min. before ischemia reduced the contents of dopamine and its metabolite, 3,4-dihydroxyphenylacetic acid and the content of glycine in the striatal extracellular fluid of the rat during ischemia. However, NBP did not significantly affect glutamate and other amino acids content. The results suggest that NBP is beneficial to ameliorate the striatal ischemic injury.

L7 ANSWER 37 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:2562 CAPLUS

DOCUMENT NUMBER: 126:42596
TITLE: Effect of dL-3-n-butylphthalide on delayed neuronal damage after focal cerebral ischemia and intrasynaptosome calcium in rats
AUTHOR(S): Lin, Jianfeng; Feng, Yipu
CORPORATE SOURCE: Inst. Materia Medica, Chinese Acad. Med. Sci., beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1996), 31(3), 166-170
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Chinese Academy of Medical Sciences, Institute of Materia Media
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Effect of dl-3-n-butylphthalide (NBP) on the size of infarction and behavior changes were investigated after delayed neuronal damage in rats subjected to permanent middle cerebral artery occlusion (MCAO) by the method of Tamura et al., and the scores of behavior were evaluated by the method of Bederson et al. The size of infarction area was significantly reduced by administration of NBP at the dose of 80, 160, and 240 mg kg-12 h after MCAO, and the percentage of reduction of infarction area was 49.0%, 69.5% and 85.1%, resp., and neurol. deficit was minimized. Pretreatment with NBP at the dose of 80 mg kg-1 per day for 7 days by the end of the final dose 24 h administered before MCAO or with the single dose of 160 mg kg-1 1 h before MCAO observed such effects too. The level of calcium [(Ca2+)i] in rat intrasynaptosomes as determined by fluorescence technique showed that NBP did not affect the 30 mmol L-1 KCl induced raise of (Ca2+)i, however, the effects on calcium overload induced by excitatory amino acid remained to be determined The results suggest that NBP possesses therapeutic and preventive effect on stroke.

L7 ANSWER 38 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:482994 CAPLUS
DOCUMENT NUMBER: 125:158168
TITLE: Effect of dl-3-n-butylphthalide on isolated tail artery contraction of rat induced by potassium chloride and norepinephrine
AUTHOR(S): Liu, Xiaoguang; Feng, Yipu
CORPORATE SOURCE: Inst. of Materia Medica, Chinese Academy of Medical Sci., Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaolixue Yu Dulixue Zazhi (1996), 10(2), 113-115
CODEN: ZYYZEW; ISSN: 1000-3002
PUBLISHER: Zhongguo Yaolixue Yu Dulixue Zazhi Biarjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB At a concentration of 100 or 500 μmol/L, dl-3-n-butylphthalide (NBP) competitively inhibited the contraction induced by norepinephrine (NE) and noncompetitively inhibited the contraction induced by KCl. The values of pA2 and pD2' were 4.86 ± 0.13 and 3.57 ± 0.14, resp. Compared with nimodipine (pD2' = 8.50 ± 0.20), NBP had weaker influence on voltage-dependent calcium channel. NBP, at a concentration of 100 μmol/L, inhibited the contraction induced by NE-dependent intracellular calcium, but NBP had no effect on contraction induced by extracellular calcium release initiated by NE in vascular smooth muscle. The results suggest that the inhibitive action of NBP on NE-initiated intracellular calcium release is responsible for the protective effect of NBP on brain ischemic damage.

L7 ANSWER 39 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:402887 CAPLUS
DOCUMENT NUMBER: 125:104889
TITLE: Effect of DL-3-n-butylphthalide on purine metabolites in striatum extracellular fluid in 4-vessel occlusion rats

AUTHOR(S): Hu, Dun; Huang, Xinxiang; Feng, Yipu
CORPORATE SOURCE: Inst. Mater. Med., Chinese Acad. Scis., Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1996), 31(1), 13-17
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Chinese Academy of Medical Sciences, Institute of Materia Media
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The effects of DL-3-n-butylphthalide (NBP) on some purine metabolite levels in extracellular fluid of rat striatum during global ischemia and reperfusion were studied. Global ischemia was produced by the four-vessel occlusion method. Push-pull cannula was implanted stereotaxically into the stratum of rat and was perfused with Ringer's solution at a flow rate of 2.5 μL/min. HPLC was used to analyze the purine in the perfused fluid. The levels of adenosine, inosine, hypoxanthine and xanthine were significantly increased during cerebral ischemia and reperfusion. NBP at the dose of 20 or 40 mg/kg given i.p. 20 min before ischemia depressed the increase of these purine metabolites during ischemia and reperfusion dependent on dose. No change in the level of purine metabolites was found in sham operated rats. The results suggest that the effect of NBP might be beneficial for protection against post-ischemic neuronal damage.

L7 ANSWER 40 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:112901 CAPLUS
DOCUMENT NUMBER: 124:220255
TITLE: Protective effect of DL-3-n-butylphthalide on ischemic neurological damage and abnormal behavior in rats subjected to focal ischemia
AUTHOR(S): Liu, X. G.; Feng, Y. P.
CORPORATE SOURCE: Inst. Materia Medica, Chinese Academy Medical Sci., Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1995), 30(12), 896-903
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Chinese Academy of Medical Sciences, Institute of Materia Media
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB DL-3-N-butylphthalide (NBP) was known to have improving effect on brain energy metabolism after ischemia insult. The purpose of this study is to determine if the drug has protective action against ischemic neuronal damage. In the present study, the effect of NBP on cerebral infarction and neurol. deficits after middle cerebral artery occlusion (MCAO) in rats was investigated. Focal cerebral ischemia was produced by permanent occlusion of the proximal portion of the right middle cerebral artery (MCA) according to the technique of Tamura. The infarct area was measured by the 2,3,5-triphenyltetrazolium chloride (TTC) staining technique. The extent of neurol. deficits was evaluated by the method of Bederson. The histol. changes in neuronal change after MCAO in rats were also studied. The results indicate that the infarct area and the score of neurol. deficits after MCAO were reduced significantly following i.p. pretreatment or pre- and post-treatment with NBP 20 mg·kg-1. The treatment with NBP 10 or 20 mg·kg-1 (i.p.), or 20, 40 or 80 mg·kg-1(po) 15 min and even 2 h (20 mg·kg-1, i.p.) after MCAO also markedly reduced the infarct area and the score of neurol. deficits. However, no effect was found when NBP (20 mg·kg-1) was injected i.p. 4 h after MCAO. MK-801 (0.5 mg·kg-1, i.p.), a non-competitive antagonist of NMDA receptor, significantly reduced the size of infarction and the score of neurol. deficits in rats subjected to MCAO. The potency of NBP in reducing the infarct area and neurol. deficits was found to be quite similar to that of MK-801 (0.5 mg·kg-1, i.p.). No neuroprotective effect of nimodipine (1.0 mg·kg-1, s.c.) was found. Generally, the potency

of NBP in protecting rats from ischemic neurol. damage is equal to that of MK-801 and is more powerful than that of Nimodipine. Side effects of NBP in behavior were not found. Therefore, NBP seems to be a hopeful drug for the treatment of stroke.

L7 ANSWER 41 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:36213 CAPLUS
DOCUMENT NUMBER: 124:135212
TITLE: Effect of DL-3-butylphthalide (NBP) on mouse brain energy metabolism in complete brain ischemia induced by decapitation
AUTHOR(S): Feng, Y. P.; Hu, D.; Zhang, L. Y.
CORPORATE SOURCE: Inst. Materia Med., Chinese Acad. Med. Sci., Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1995), 30(10), 741-4
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Chinese Academy of Medical Sciences, Institute of Materia Media
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of NBP on respiration (gasping) and brain energy metabolism after complete brain ischemia were determined in mice subjected to decapitation. The levels of ATP, phosphocreatine (PCr) and lactate were determined NBP at 112.5 or 250 mg/kg, s.c., prior to decapitation, prolonged the duration of gasping; at 150 or 200 mg/kg, s.c., it reduced the level of lactate and increase the levels of ATP and PCr after complete brain ischemia. NBP may have brain-protective action and improve ischemic brain energy metabolism

L7 ANSWER 42 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:994233 CAPLUS
DOCUMENT NUMBER: 124:135714
TITLE: Apiolin-A for prevention and treatment of diseases caused by cerebral ischemia
INVENTOR(S): Feng, Yipu; Yang, Junshan; Zhang, Juntian
PATENT ASSIGNEE(S): Chinese Academy of Medical Sciences, Institute of Pharmacology, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 41 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1100097	A	19950315	CN 1993-117148	19930909
CN 1048158	B	20000112		
PRIORITY APPLN. INFO.:			CN 1993-117148	19930909

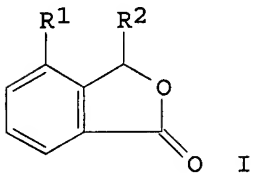
AB Apiolin-A in pharmaceutical dosage forms is claimed for prevention and treatment of diseases caused by cerebral ischemia e.g brain edema, injury, necrosis, and memory impairment in humans and mammalian animals. Increases in adenosine, inosine, hypoxanthine, xanthine, dopamine, and DOPAC and decreases in glycine in the strial extracellular fluid after cerebral ischemia were inhibited by apiolin-A.

L7 ANSWER 43 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1990:55576 CAPLUS
DOCUMENT NUMBER: 112:55576
TITLE: Preparation of phthalide derivatives and pharmaceutical compositions for lowering viscosity of blood to increase blood flow
INVENTOR(S): Kubota, Kiyoshi; Ogawa, Yoshimitsu; Hosaka, Kunio; Chin, Masao

PATENT ASSIGNEE(S): Tsumura and Co., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01050817	A	19890227	JP 1987-205217	19870820
PRIORITY APPLN. INFO.:			JP 1987-205217	19870820

OTHER SOURCE(S): MARPAT 112:55576
GI



I

AB The title compds. (I; R1 = H, HO, MeO; R2 = Pr, Bu), useful for treatment of brain ischemia caused by microcirculation disorders, are prepared Thus, a solution of 2-(3-methoxyphenyl)-4,4-dimethyl-2-oxazoline in THF was treated with BuLi at -45° followed by n-butylaldehyde at -45° for 1 h to give 72% 2-[3-methoxy-2-(1-hydroxybutyl)phenyl]-4,4-dimethyl-2-oxazoline which was refluxed with 6N HCl to give 74% 4-methoxy-3-propylphthalide. Four I in vitro reduced the viscosity of rats' blood by 12.8-20.3%.

L7 ANSWER 44 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2007289036 MEDLINE
DOCUMENT NUMBER: PubMed ID: 17374747
TITLE: l-3-n-Butylphthalide improves cognitive impairment induced by chronic cerebral hypoperfusion in rats.
AUTHOR: Peng Ying; Xu Shaofeng; Chen Guiquan; Wang Ling; Feng Yipu; Wang Xiaoliang
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences, Beijing, China.
SOURCE: The Journal of pharmacology and experimental therapeutics, (2007 Jun) Vol. 321, No. 3, pp. 902-10. Electronic Publication: 2007-03-20.
Journal code: 0376362. ISSN: 0022-3565.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200707
ENTRY DATE: Entered STN: 16 May 2007
Last Updated on STN: 31 Jul 2007
Entered Medline: 30 Jul 2007

AB 3-n-Butylphthalide (NBP) may be beneficial for the treatment of ischemic stroke with multiple actions on different pathophysiological processes. In the present study, we investigated the effect of NBP isomers on learning and memory impairment induced by chronic cerebral hypoperfusion in rats. Male Wistar rats were orally administered 10 and 30 mg/kg l-, d-, or dl-NBP daily for 23 days after bilateral permanent occlusion of the common carotid arteries. Rats receiving 10 mg/kg l-NBP performed significantly better in tests for spatial learning

and memory, and they had attenuated cerebral pathology, including neuronal damage, white matter rarefaction, and glial activation compared with controls. Furthermore, 10 mg/kg l-NBP-treated rats had significantly higher choline acetyltransferase activity, decreased cortical lipid peroxide, and reduced hippocampal superoxide dismutase activity, compared with vehicle controls. However, d- and dl-NBP did not show significant beneficial effects. The present findings demonstrate that the beneficial effects of l-NBP on hypoperfusion-induced cognitive deficits may be due to preventing neuropathological alterations, inhibiting oxidative damage and increasing acetylcholine synthesis. Our results strongly suggest that l-NBP has therapeutic potential for the treatment of dementia caused by decreased cerebral blood flow.

L7 ANSWER 45 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2006281181 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16527903
TITLE: 2-(1-Hydroxypentyl)-benzoate increases cerebral blood flow and reduces infarct volume in rats model of transient focal cerebral ischemia.
AUTHOR: Zhang Yi; Wang Ling; Li Jiang; Wang Xiao-Liang
CORPORATE SOURCE: Department of Pharmacology, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, 1 Xian Nong Tan Street, Beijing 100050, China.
SOURCE: The Journal of pharmacology and experimental therapeutics, (2006 Jun) Vol. 317, No. 3, pp. 973-9. Electronic Publication: 2006-03-09.
Journal code: 0376362. ISSN: 0022-3565.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200606
ENTRY DATE: Entered STN: 23 May 2006
Last Updated on STN: 27 Jun 2006
Entered Medline: 26 Jun 2006

AB 2-(1-Hydroxypentyl)-benzoate (dl-PHPB), a derivate of 3-n-butylphthalide (dl-NBP), is a novel drug candidate used for treatment of cerebral ischemia. The goal of the present study was to investigate the effects of dl-PHPB on infarct volume, neurological function, and cerebral blood flow (CBF) in transient focal cerebral ischemia. Therefore, an animal model of 2-h middle cerebral artery occlusion (MCAO) followed by 24-h reperfusion was used. Rats received dl-PHPB (1.3, 3.9, or 12.9 mg/kg) intravenously 10 min after the onset of MCAO. Compared with the vehicle control group (37.4%), infarct volume in dl-PHPB-treated groups was reduced significantly and dose-dependently to 25.4, 17.4, and 13.7%, respectively. The changes in neurological deficient were also observed in neurobehavioral test in a dose-dependent manner, and the neuronal score was improved significantly from the vehicle control of 3.2 to 2.7, 2.1, and 1.8, respectively. At the highest dose, the potency of dl-PHPB was similar to those of dl-NBP. CBF was quantified by using laser-Doppler flowmetry. During the ischemia, the regional CBF values of dl-PHPB groups were significantly higher than that of vehicle group. In addition, our study showed that dl-PHPB converted into dl-NBP very quickly in blood in vitro. Approximately 70% of dl-PHPB converted into dl-NBP in 5 min when dl-PHPB was added into plasma at final concentrations of 6, 30, and 60 mug/ml. This result demonstrated that the neuronal protection effects of dl-PHPB were mainly induced by dl-NBP, an active compound converted from its precursor, dl-PHPB. In conclusion, dl-PHPB can reduce infarct volume and improve neurobehavioral deficits in a rat model of transient MCAO. Those effects may partially be due to an increase in CBF by the active metabolite (dl-NBP) of dl-PHPB. Therefore, our results suggest that dl-PHPB may be useful for treatment of

ischemia stroke.

L7 ANSWER 46 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2004268317 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15167282
TITLE: Antiplatelet and antithrombotic activity of L-3-n-butylphthalide in rats.
AUTHOR: Peng Ying; Zeng Xianke; Feng Yipu; Wang Xiaoliang
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100050, China.
SOURCE: Journal of cardiovascular pharmacology, (2004 Jun) Vol. 43, No. 6, pp. 876-81.
Journal code: 7902492. ISSN: 0160-2446.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200409
ENTRY DATE: Entered STN: 29 May 2004
Last Updated on STN: 10 Sep 2004
Entered Medline: 9 Sep 2004

AB 3-n-butylphthalide (NBP) is a potentially beneficial drug for the treatment of ischemic stroke with multiple actions on different pathophysiological processes. In the present study, the effect of l-, d-, and dl-NBP was investigated on ADP-, collagen-, and AA-induced platelet aggregation. l-NBP was the most potent among l-, d-, and dl-NBP. At higher concentration the effect of dl-NBP on platelet aggregation was greater than that of l- or d-NBP alone. The ex vivo antiaggregatory activity of l-NBP 100mg/kg declined gradually after 2 hours, but a considerable antiplatelet activity was still observed 4h after l-NBP administration. NBP was given orally and resulted in a dose-dependent inhibition of thrombus formation. Of the two isomers, l-NBP was the most potent. It significantly protected mice from a mixture of collagen and epinephrine induced thromboembolic death. When 100 mg/kg of l-NBP were administered orally to rats, the bleeding time increased 2.1-fold compared with the control group. At the same dose, ex vivo platelet aggregation induced by ADP, collagen, and AA was inhibited by l-NBP and the antithrombotic effects of the compound were also observed. Thus, NBP exerts oral anti-platelet and anti-thrombotic efficacy without perturbing systemic hemostasis in rats. l-NBP is more potent than d- and dl-NBP as antiplatelet agent.

L7 ANSWER 47 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2003371882 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12905849
TITLE: Effects of NBP on ATPase and anti-oxidant enzymes activities and lipid peroxidation in transient focal cerebral ischemic rats.
AUTHOR: Dong Gao-xiang; Feng Yi-Pu
CORPORATE SOURCE: Department of Pharmacology, Institute of Materia Medica, CAMS, PUMC, Beijing 100050, China.
SOURCE: Zhongguo yi xue ke xue yuan xue bao. Acta Academiae Medicinae Sinicae, (2002 Feb) Vol. 24, No. 1, pp. 93-7.
Journal code: 8006230. ISSN: 1000-503X.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200406

ENTRY DATE: Entered STN: 9 Aug 2003
Last Updated on STN: 26 Jun 2004
Entered Medline: 25 Jun 2004

AB OBJECTIVE: The aim of the present study was designed to explore the effect of (+/-) -3-n-butylphthalide (NBP) on ATPase, anti-oxidant enzymes activities and lipid peroxidation of mitochondria and cerebral cortex in rats subjected to 24 hours of reperfusion following 2 hours of cerebral ischemia (tMCAO). METHODS: Activities of SOD (Superoxide Dismutase), GSH-Px (glutathione Peroxidase,) and CAT (Catalase), and MDA level of mitochondria or cortex were measured by using biochemical methods in tMCAO rats. RESULTS: (1) The activities of mitochondrial Na+K(+)-ATPase, Ca(2+)-ATPase and Mg2+ ATPase were found to decrease significantly in the vehicle group (ischemia + saline). Pre-treatment with NBP (5, 10, 20 mg/kg, i.p.) 10 min before tMCAO markedly enhanced the activities of Na+K(+)-ATPase and Ca(2+)-ATPase, compared with vehicle group. (2) The activities of SOD and mitochondrial GSH-Px were decreased and MDA level increased in vehicle groups as compared with that in sham group (non-ischemia + saline). NBP (20 mg/kg, i.p.) significantly enhanced total mitochondrial SOD activity, and also enhanced cerebral cortex total SOD activity (in 5, 10, 20 mg/kg groups). However, it had no obvious effect on CuZn-SOD activity. NBP (20 mg/kg i.p.) markedly increased mitochondrial (but not in cerebral cortex) GSH-Px activity; NBP 10, 20 mg/kg markedly decreased mitochondrial MDA level compared with that in vehicle group ($P < 0.05$). (3) The action of raceme NBP on the increase of the activities of ATPase and antioxidative enzymes seemed to be beneficial than that of (-) -NBP or (+) NBP. CONCLUSION: The results suggest that NBP improves energy pump and subsides oxidative injury which may contribute to its anti-neuronal apoptotic effect.

L7 ANSWER 48 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2003369949 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12904280
TITLE: Effects of chiral 3-n-butylphthalide on apoptosis induced by transient focal cerebral ischemia in rats.
AUTHOR: Chang Qing; Wang Xiao-Liang
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences Peking Union Medical College, Beijing 100050, China.
SOURCE: Acta pharmacologica Sinica, (2003 Aug) Vol. 24, No. 8, pp. 796-804.
Journal code: 100956087. ISSN: 1671-4083.
PUB. COUNTRY: China
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 8 Aug 2003
Last Updated on STN: 16 Mar 2004
Entered Medline: 15 Mar 2004

AB AIM: To investigate the effects of 3-n-butylphthalide (NBP) on apoptosis induced by transient focal cerebral ischemia in rats, compare the action potency of s-(-)-, r-(+)- and (+/-)-NBP, and clarify the enantiomer that played a main role. METHODS: DNA fragmentation was detected by the terminal deoxynucleotidyl transferase-mediated biotinylated UTP nick end labeling (TUNEL) assay and gel electrophoresis. The expression of cytochrome c and caspase-3 protein was observed by Western blot analysis and immunohistochemistry. Middle cerebral artery was occluded for 2 h. RESULTS: Significant DNA fragmentation was detected at 24 h after reperfusion. This response was inhibited by s-(-)-NBP (5, 10 mg/kg i.p.). s-(-)-NBP 10 mg/kg almost completely inhibited DNA fragmentation, whereas r-(+)- NBP 10 mg/kg showed less effect. (+/-)-NBP (20 mg/kg) showed an inhibitory effect between that of s-(-)-NBP (10

mg/kg) and r-(+)-NBP (10 mg/kg). During the apoptotic process, cytochrome c was released into the cytosol and caspase-3 was activated. This effect was markedly inhibited by s-(-)-NBP, and the action potency of r-(+)- and (+/-)-NBP on the changes of cytochrome c and caspase-3 protein was similar to that on DNA fragmentation. CONCLUSION: NBP, especially its s-(-)-enantiomer, could potently reduce the release of cytochrome c, decrease the activation of caspase-3, and inhibit DNA fragmentation after transient focal cerebral ischemia. Our findings on the beneficial effects of NBP on cerebral ischemia-induced apoptosis might have important implications for the study and treatment of ischemic cerebrovascular diseases.

L7 ANSWER 49 OF 62 MEDLINE on STN
ACCESSION NUMBER: 2002276024 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12016850
TITLE: Effects of butylphthalide on extracellular 6-keto-PGF1 alpha, TXB2 and 6-keto-PGF1 alpha/TXB2 ratio in cultured rat cortical neurons.
AUTHOR: Yan C; Feng Y
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences, Peking Union Medical College, Beijing 100050.
SOURCE: Yao xue xue bao = Acta pharmaceutica Sinica, (1998 Dec) Vol. 33, No. 12, pp. 881-5.
Journal code: 21710340R. ISSN: 0513-4870.
PUB. COUNTRY: China
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: Chinese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200301
ENTRY DATE: Entered STN: 18 May 2002
Last Updated on STN: 18 Jan 2003
Entered Medline: 17 Jan 2003

AB The effects of 3-n-butylphthalide(NBP) on the levels of 6-keto-PGF1 alpha, TXB2 and 6-keto-PGF1 alpha/TXB2 ratio were studied with methods of RIA. d-NBP and l-NBP(0.1-100 mumol.L-1) concentration-dependently increased 6-keto-PGF1 alpha release, decreased TXB2 release from neuronal cells, and significantly enhanced extracellular 6-keto-PGF1 alpha/TXB2 ratio in primary cultured rat cortical neurons exposed to hypoxic-hypoglycemic media for 5 h or hypoxic-hypoglycemic media for 5 h following normal media for 3 h. Aspirin(0.1-100 mumol.L-1) was also shown to inhibit TXB2 release from cortical neurons in a dose-dependent manner. However aspirin only increased 6-keto-PGF1 alpha/TXB2 ratio at low dose because aspirin inhibited both 6-keto-PGF1 alpha and TXB2 release simultaneously at large dose(10-100 mumol.L-1). This suggests that the action of l-NBP, d-NBP and dl-NBP on the increase of 6-keto-PGF1 alpha/TXB2 ratio might be one of the mechanisms in which NBP enhanced focal cerebral blood flow and improved ischemic brain damage.

L7 ANSWER 25 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:450225 CAPLUS
DOCUMENT NUMBER: 131:281216
TITLE: Effect of 3-n-butylphthalide on reperfusion induced lipid peroxidation following cerebral ischemia in rats and superoxide radical formation in vitro
AUTHOR(S): Chong, Zhaozhong; Feng, Yipu
CORPORATE SOURCE: Department of Pharmacology, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Journal of Chinese Pharmaceutical Sciences (1999), 8(2), 95-99
CODEN: JCHSE4; ISSN: 1003-1057
PUBLISHER: Beijing Medical University, School of Pharmaceutical Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Reperfusion after focal cerebral ischemia induced an increase in the content of malondialdehyde (MDA), a product of lipid peroxidn., in ischemic brain. Dl-3-n-Butylphthalide (dl-NBP, 20 mg•kg-1, i.p.), was shown to decrease the content of MDA in cerebral cortex of rats subjected to 1 h reperfusion following 6 h MCAO. Dl-NBP, d-NBP and l-NBP were also shown to inhibit the production of superoxide anion in xanthine-xanthine oxidase reaction system in vitro. The effect of dl-NBP, d-NBP and l-NBP on superoxide anion may be due to their capability of inhibiting the activity of xanthine oxidase. The results suggest that dl-NBP may possess inhibiting effect on the formation of superoxide anion and reducing effect on lipid peroxidn. during reperfusion after cerebral ischemia.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 26 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:356180 CAPLUS
DOCUMENT NUMBER: 131:209011
TITLE: Effects of butylphthalide on activities of complexes of mitochondrial respiratory chain
AUTHOR(S): Xiong, Jie; Feng, Yipu
CORPORATE SOURCE: Institute of Materia Media, Chinese Academy of Medical Sciences, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1999), 34(4), 241-245
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Yaoxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of dl-3-n-butylphthalide (dl-NBP) on the function of mitochondrial respiratory chain were studied by determination of the activities of the four complexes of the respiratory chain. The decreased activity of complex IV after 1 h-ischemia was returned to normal level by treatment of NBP (5 mg.kg-1 i.p. or 10 mg.kg-1 10 min before ischemia). The activity of complex I was significantly increased at 3 h, and that of complex II was decreased at 6 h during the reperfusion period after ischemia; the altered activities may returned to normal by treatment of NBP. The same increasing effect of NBP (d-, l- or dl-) on the activity of complex IV was found in cultured neurons subjected to 6 h-hypoxia/hypoglycemia, and d-NBP was more effective. The results indicated that NBP can act directly on complex IV to increase its activity, and its action may play an important role in increasing brain energy supply during cerebral ischemia.

L7 ANSWER 27 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:280032 CAPLUS
DOCUMENT NUMBER: 131:139336
TITLE: Effects of 3-n-butylphthalide on pial microcirculation dysfunction in rats with focal cerebral ischemia
AUTHOR(S): Xu, Haoliang; Feng, Yipu
CORPORATE SOURCE: Institute of Material Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1999), 34(3), 172-175
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Yaoxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of dl-, l-, and d-3-n-butylphthalide (NBP) on pial arteriole diameter (AD) and blood flow velocity (BFV) in rats with focal cerebral ischemia were studied. The effects of dl-NBP, l-NBP and d-NBP on AD and BFV were investigated in the left middle cerebral artery occluded (L-MCAO) rats anesthetized with urethane by using the method of acute cranial window technique under in vitro videomicroscope. dl-NBP, d-NBP and l-NBP (25 mg kg-1 i.p.) and nimodipine were administered 20 min after MCAO or 1 h before MCAO. In the vehicle control group, MCAO decreased BFV and AD by 18.3% and 52% resp., compared with the pre-ischemia baseline values. In the pretreatment groups, no change in pial AD was found after dl-NBP, l-NBP, d-NBP administration in normal animals, and a rapid and marked decrease in BFV and Ad of the selected pail artery was observed within 5 min after MCAO. The decreased level of AD and BFV recovered quickly after MCAO in the dl-, l-NBP and nimodipine groups, while the dysfunction of microcirculation was exacerbated by d-NBP. In the post-treatment groups, dl-NBP (12.5, 25 mg kg-1 i.p.) induced dilation of the pial arterioles and the increase in BFV was in dose-dependent manner. The pial arteriolar response to MCAO was no affected by d-NBP and nimodipine. These data suggested that the improving effects of dl-NBP and l-NBP on microcirculation dysfunction during ischemia might play an important role in their protective effects against focal cerebral ischemia injury. L-NBP and d-NBP showed counteractive effect on pial AD and BFV in MCAO rats indicating that NBP has stereoselective characters on its protective action against cerebral ischemia injury.

L7 ANSWER 28 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:88971 CAPLUS
DOCUMENT NUMBER: 131:521
TITLE: Effects of butylphthalide on extracellular 6-keto-PGF1α, TXB2 and 6-keto-PGF1α/TXB2 ratio in cultured rat cortical neurons
AUTHOR(S): Yan, Chaohua; Feng, Yipu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1998), 33(12), 881-885
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Chinese Academy of Medical Sciences, Institute of Materia Media
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of 3-n-butylphthalide (NBP) on the levels of 6-keto-PGF1α, TXB2 and 6-keto-PGF1α/TXB2 ratio were studied with RIA methods. D-NBP and l-NBP (0.1-100 μmol L-1) concentration-dependently increased 6-keto-PGF1α release, decreased TXB2 release from neuronal cells, and significantly enhanced extracellular 6-keto-PGF1α/TXB2 ratio in primary cultured rat cortical neurons exposed to hypoglycemic and hypoxic media for 5 h or hypoxic-hypoglycemic media for 5 h following normal media for 3 h. Aspirin (0.1-100 μmol

L-1) was also shown to inhibit TXB2 release from cortical neurons in a dose-dependent manner. However aspirin only increased 6-keto-PGF1α/TXB2 ratio at low dose because aspirin inhibited both 6-keto-PGF1α and TXB2 release simultaneously at large dose (10-100 μmol L- 1). This suggested that the increase of 6-keto-PGF1α/TXB2 ratio by l-NBP, d-NBP and dl-NBP might be due to NBP enhancing focal cerebral blood flow and improving ischemic brain damage.

L7 ANSWER 29 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:808407 CAPLUS
DOCUMENT NUMBER: 130:261906
TITLE: Protective effects of d-, l-, and dl-3-n-butylphthalide on neuronal damage induced by hypoxia/hypoglycemia in cultured rat cortical neurons
AUTHOR(S): Yan, Chaohua; Fen, Yipu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy Of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1998), 33(7), 486-492
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Chinese Academy of Medical Sciences, Institute of Materia Media
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The protective effects of d-3-n-butylphthalide (d-NBP) and l-3-n-butylphthalide (l-NBP) on hypoxia/hypoglycemia-induced cytotoxicity in primary cultured rat cortical neurons were studied. The results showed that d-NBP and l-NBP (1-100 μmol/L) inhibited hypoxia/hypoglycemia-induced lactate dehydrogenase (LDH) release, decreased the cell death rate and improved the damaged cellular morphol. at 10 μmol/L concentration The d-NBP, l-NBP and dl-NBP also significantly reduced the liberation of polyribosomes from the neuronal rough endoplasmic reticulum and the disaggregation of polyribosomes induced by hypoxia/hypoglycemia. These data suggested that d-NBP, l-NBP and dl-NBP could remarkably protect the cultured neurons against hypoglycemia-induced damage.

L7 ANSWER 30 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:581926 CAPLUS
DOCUMENT NUMBER: 130:20472
TITLE: Effect of DL-3-N-butylphthalide on the expression of HSP70 mRNA and c-fos in transient cerebral ischemia and reperfusion rat brain
AUTHOR(S): Xiong, Jie; Feng, Yipu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1998), 33(6), 401-406
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Chinese Academy of Medical Sciences, Institute of Materia Media
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB DL-3-N-butylphthalide (NBP), the anti-cerebral ischemia remedy, was tested on transient cerebral ischemia reperfusion rat models to study the effect on expression of HSP70 mRNA and c-fos measured by in situ hybridization and Northern blot in different time phases of reperfusion. One hour after ischemia reperfusion, HSP70 mRNA was observed in the ipsilateral hemisphere which gradually enhanced during the 3, 6, and 12 h of reperfusion. NBP, 10-20 mg/kg i.p., 10 min. before or immediately at the initiation of ischemia significantly reduced the HSP70 mRNA expression at the 6 and 12 h reperfusion phase as measured by in situ hybridization. Expression of c-fos appeared at 0.5 h reperfusion, reached peak at 3 h and decreased 6 h after reperfusion. NBP, 10 mg/kg i.p. before ischemia significantly reduced the 1

and 3 h c-fos expression. The results suggest that the mechanism of protective effect of NBP against brain ischemia is the inhibition of injury induced gene expression during the reperfusion phase.

L7 ANSWER 31 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:491655 CAPLUS
DOCUMENT NUMBER: 129:254847
TITLE: Effect of dl-3-n-butylphthalide on striatum cerebral blood flow in normal and middle cerebral artery occlusion rats
AUTHOR(S): Yan, Chao-Hua; Zhang, Jun-Tian; Feng, Yi-Pu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences, Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaolixue Yu Dulixue Zazhi (1998), 12(1), 36-39
CODEN: ZYYZEW; ISSN: 1000-3002
PUBLISHER: Zhongguo Yaolixue Yu Dulixue Zazhi Biarjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The purpose of this study was to observe the changes in regional cerebral blood flow (rCBF) after administration of dl-3-n-butylphthalide (NBP) in normal or middle cerebral artery occlusion (MCAO) rats. Microelectrode was implanted in right striatum of chloral hydrate-anesthetized rats and rCBF was monitored by hydrogen clearance method. The results indicated that NBP could markedly enhance the regional blood flow to right striatum ($P<0.01$). In addition, NBP significantly increased the regional blood flow to striatum in normal rats when 5-10 mg kg-1 (i.p.) was used, and it was reached the maximum effect at the dosage of 10 mg kg-1, but it had a weaker effect at the dosage of 20 mg kg-1. No changes in mean arterial blood pressure (MABP) was found during the expts. When nimodipine (0.5 mg kg-1) was i.p. administered, there was a similar improvement of rCBF with a slight decline in MABP. These data suggests that NBP can increase rCBF without alteration in MABP, and its effects on cerebral microvasculature are likely to contribute to its neuroprotective effects.

L7 ANSWER 32 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:191470 CAPLUS
DOCUMENT NUMBER: 128:252929
TITLE: Effects of dl-3-n-butylphthalide on regional cerebral blood flow in right middle cerebral artery occlusion rats
AUTHOR(S): Yan, Chao-Hua; Feng, Yi-Pu; Zhang, Jun-Tian
CORPORATE SOURCE: Inst. Materia Medica, Peking Union Medical Coll., Chinese Academy of Medical Sciences, Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaoli Xuebao (1998), 19(2), 117-120
CODEN: CYLPDN; ISSN: 0253-9756
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB AIM: To study the effect of dl-3-n-butylphthalide (NBP) on regional cerebral blood flow (rCBF) in focal cerebral ischemia rats. METHODS: In chloral hydrate-anesthetized rat, the proximal portion of right middle cerebral artery (RMCA) was occluded, and H2 needle electrode was implanted in right striatum. RCBF was monitored in striatum using hydrogen clearance method. RESULTS: Ten min after RMCA occlusion (RMCAO), NBP (5, 10, 20 mg·kg-1 i.p.) markedly increased rCBF to striatum ($P < 0.01$). When NBP was given i.p. 40 min after RMCAO, the increasing effect on rCBF was also observed ($P < 0.05$). However, when NBP was injected i.p. 60 min after RMCAO, the increasing effect of NBP on rCBF was not found. In NBP-pretreated (i.p. 40 min before RMCAO) group, rCBF in striatum measured at different time points of 30, 60, 90, 120, 150, and 180 min after RMCAO were increased by 97%, 107%, 136%, 211%, 173%, and

317%, resp., compared with the percentages of vehicle group. The potency of the effect of nimodipine (0.5 mg·kg-1 i.p.) was similar to that of NBP (10 mg·kg-1 i.p.). CONCLUSION: NBP pre-treatment or post-treatment markedly enhanced the rCBF to striatum in RMCAO rats.

L7 ANSWER 33 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:735138 CAPLUS
DOCUMENT NUMBER: 128:30323
TITLE: Effect of DL-3-n-butylphthalide on memory disturbance induced by focal cerebral ischemia in rats
AUTHOR(S): Hu, Dun; Zhang, Liying; Feng, Yipu
CORPORATE SOURCE: Inst. Materia Medica, Peking Union Medical Coll., Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaolixue Yu Dulixue Zazhi (1997), 11(1), 14-16
CODEN: ZYYZEW; ISSN: 1000-3002
PUBLISHER: Zhongguo Yaolixue Yu Dulixue Zazhi Biarjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Effect of DL-3-n-butylphthalide (NBP) on response against shuttle box was studied in rats subjected to middle cerebral artery occlusion (MCAO). Each rat was subjected to 20 trials per time for 4-5 times (one time every second day). A buzzer for 10 s was used as conditioning stimulus followed by a foot shock for 10 s as unconditioning stimulus. The error number of active avoidance response and the latencies of active avoidance and escape response were observed NBP was given ig 15 min after MCAO. The experiment was carried out 24 h after MCAO. No change was observed in the sham operation group before and after MCAO. The number of the active avoidance response was significantly increased and the latencies of active avoidance and escape response were shortened markedly after receiving NBP 30 and 100 mg kg-1, resp. The results suggest that NBP has an ameliorative effect on memory disturbance induced by focal cerebral ischemia in rats.

L7 ANSWER 34 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:716416 CAPLUS
DOCUMENT NUMBER: 128:43601
TITLE: Effects of dl-3-n-butylphthalide on production of TXB2 and 6-keto-PGF1α in rat brain during focal cerebral ischemia and reperfusion
AUTHOR(S): Chong, Zhao-Zhong; Feng, Yi-Pu
CORPORATE SOURCE: Chinese Acad. of Med., Sci. & Peking Union Med. Coll., Inst. of Mater. Medica, Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaoli Xuebao (1997), 18(6), 505-508
CODEN: CYLPDN; ISSN: 0253-9756
PUBLISHER: Kexue
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To study the effects of dl-3-n-butylphthalide (NBP) on the changes of thromboxane B2 (TXB2) and 6-keto-PGF1 alpha (6-keto-PGF1α) contents in hippocampus, striatum, and cerebral cortex of rats subjected to focal cerebral ischemia followed by reperfusion. Focal cerebral ischemia was induced by inserting a nylon suture into intracranial segment of internal carotid artery from external carotid artery and blockade of the origin of middle cerebral artery. For reperfusion, the suture was pulled out to restore the blood flow to the ischemic brain. Determination of TXB2 and 6-keto-PGF1α was performed by RIA method. Reperfusion following focal cerebral ischemia resulted in increases in TXB2 at 5 min and 6-keto-PGF1α at 30 min and a decrease in the ratio of epoprostenol (PGI2)/thromboxane A2 (TXA2) (6-keto-PGF1α/TXB2) at 5 min in hippocampus, striatum, and cerebral cortex. NBP 10 mg·kg-1 reduced the content of TXB2 without decreasing effect on 6-keto-PGF1α. NBP 20 mg·kg-1 reduced both TXB2 and 6-keto-PGF1α in lesser extent than aspirin (Asp, 20

mg·kg-1). NBP 20 or 10 mg·kg-1 elevated the ratio of PGI2/TXA2 after reperfusion, but Asp 20 mg·kg-1 did not increase the ratio except in striatum at 5 min after reperfusion. NBP increases the ratio of PGI2/TXA2 which may have beneficial effects on the impaired microcirculation in postischemic brain tissues.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 15 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:676254 CAPLUS
DOCUMENT NUMBER: 134:231758
TITLE: Effects of DL-3-N-butylphthalide on arachidonic acid release and phospholipase A2 mRNA expression in cerebral cortex after middle cerebral artery occlusion in rats
AUTHOR(S): Chong, Zhaozhong; Feng, Yipu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (2000), 35(8), 561-565
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Yaoxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of DL-3-n-butylphthalide (DL-NBP) on arachidonic acid (AA) release and phospholipase A2 (PLA2) mRNA in cerebral cortex of rats with focal cerebral ischemia was studied by HPLC for determination of AA and Northern blot for PLA2 mRNA expression. Focal cerebral ischemia was induced by inserting a monofilament nylon suture into the internal carotid artery and blocking the origin of the middle cerebral artery. AA release in the ischemic cerebral cortex after 6 h of cerebral ischemia was increased. AA concentration in the cerebral cortex was reduced by DL-NBP (10 or 20 mg kg-1, i.p.) and nimodipine (0.5 mg kg-1, i.p.). AA release in the brain after middle cerebral artery occlusion was decreased by D-NBP, but not by L-NBP. The expression of PLA2 mRNA in cerebral cortex induced by cerebral ischemia was inhibited by DL-NBP and D-NBP (10 or 20 mg kg-1, i.p.). The results showed that DL-NBP may inhibit AA release and PLA2 mRNA expression in the ischemic brain tissue in vivo.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 16 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:598802 CAPLUS
DOCUMENT NUMBER: 134:66049
TITLE: Dl-3-n-butylphthalide reduces brain damage in mice with closed head injury
AUTHOR(S): Chong, Zhaozhong; Feng, Yipu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences, Beijing, 100050, Peop. Rep. China
SOURCE: Chinese Medical Journal (Beijing, English Edition) (2000), 113(7), 613-616
CODEN: CMJODS; ISSN: 0366-6999
PUBLISHER: Chinese Medical Association
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To investigate the protective effect of dl-3-n-butylphthalide (NBP) as an anti-cerebral ischemic drug on brain damage 24 h after closed head injury in mice. Closed head injury was induced by dropping a 50-g weight from a height of 18 cm on a metal impounder resting on the parietal bone in mice. The neurotraumatic model induced impairment of memory function, significant cerebral edema, and disruption of the blood-brain barrier. Dl-3-n-butylphthalide (50 mg • kg-1) given i.p. 5 min and 60 min after the onset of closed head injury was found to attenuate the impairment of memory function ($P < 0.05$), alleviate brain edema in the injured cerebral cortex ($P < 0.05$), and reduce extravasation of plasma protein bound to Evans blue dye by 63.5% ($P < 0.01$). NBP was also shown to increase the activity of choline acetyltransferase in the injured cortex to 0.83 ± 0.21 ng•min-1•mg-1 ($P < 0.01$, compared with 0.48 ± 0.14 ng•min-1•mg-1 of vehicle group). NBP provides therapeutic response in exptl. closed head injury.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 17 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:503839 CAPLUS
DOCUMENT NUMBER: 133:247088
TITLE: Protective effect of butylphthalide against mitochondrial injury during cerebral ischemia
AUTHOR(S): Xiong, Jie; Feng, Yipu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Science, Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (2000), 35(6), 408-412
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Yaoxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of butylphthalide (NBP) on the function and ultrastructure of neuronal mitochondria during cerebral ischemia were studied. Cerebral ischemia models of rat middle cerebral artery occlusion in vivo and primarily cultured neurons subjected to hypoxia/hypoglycemia in vitro were used. The mitochondria membrane fluidity (MMF) was determined by using fluorescent probes diphenylhexatriene (DPH). The mitochondria membrane potential (MMP) was measured with the fluorescence of loaded rhodamine-123 using flow cytometry. The total activity of mitochondria ATPase was measured. The morphol. changes of neuronal mitochondria were studied by using electron microscopy. The significantly enhanced value of n in the vehicle (MCAO) group showed that MMF was significantly decreased during the early stage of cerebral ischemia. MMP and total ATPase activity were decreased in rat fetal neurons subjected to 3 h-hypoxia/hypoglycemia. MMF after pretreatment with dl-NBP (5 mg kg-1 and 10 mg kg-1 i.p.) was close to that of the control level. MMP and ATPase activity were decreased by dl-, l-, and d-NBP. The severe swelling and marked vacuolation of mitochondria in morphol. were improved by NBP. The results suggest that the improving effects of NBP on mitochondrial injury and morphol. changes might contribute to its therapeutic action on exptl. stroke.

L7 ANSWER 18 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:319774 CAPLUS
DOCUMENT NUMBER: 133:247035
TITLE: Inhibitory effect of GZ-02 on rat platelet aggregation
AUTHOR(S): Ma, Yitao; Zhou, Yuanpeng
CORPORATE SOURCE: Dept of Pharmacology, National Institute for the Control of Pharmaceutical and Biological Products, Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaolixue Tongbao (2000), 16(1), 72-74
CODEN: ZYTOE8; ISSN: 1001-1978
PUBLISHER: Anhui Yike Daxue Linchuan Yaoli Yanjiuso
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effect of GZ-02, a structure derivative of 3-n-butylphthalide (NBP), on rat platelet aggregation was studied. Focal cerebral ischemia was produced by permanent occlusion of the proximal of the left middle cerebral artery (MCAO); platelet aggregation induced by arachidonic acid (AA), ADP and collagen were studied by turbidimetry in rat blood, in vivo and in vitro. GZ-02 40, 80 and 160 mg kg-1 significantly inhibited abnormal increase of platelet aggregation caused by MCAO. GZ-02 selectively inhibited the platelet aggregation induced by AA, but not by ADP and collagen.

L7 ANSWER 19 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:303339 CAPLUS
DOCUMENT NUMBER: 133:84030

TITLE: Inhibitory effects of chiral 3-n-butylphthalide on inflammation following focal ischemic brain injury in rats
AUTHOR(S): Xu, Hao-Liang; Feng, Yi-Pu
CORPORATE SOURCE: Institute of Materia Medica, Peking Union Medical College and Chinese Academy of Medical Sciences, Beijing, 100050, Peop. Rep. China
SOURCE: Acta Pharmacologica Sinica (2000), 21(5), 433-438
CODEN: APSCG5
PUBLISHER: Science Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB AIM: To evaluate the degree of neutrophil infiltration into ischemic tissue after transient focal cerebral ischemia, and to examine the effects of chiral 3-n-butylphthalide (NBP) on this inflammatory process. METHODS: After a 24-h reperfusion following transient cerebral ischemia, two different techniques, histol. anal. and modified myeloperoxidase (MPO)-quantification method, were utilized to identify the infiltration of neutrophils into cerebral tissue following ischemia. The expression of intercellular adhesion mol.-1 (ICAM-1) and tumor necrosis factor-α(TNF-α) in the ischemic zone were observed by immunohistochem., Western blot, and in situ hybridization techniques. RESULTS: In cerebral cortex area perfused by middle cerebral artery (MCA), MPO activity was greatly increased after 24 h of reperfusion in the vehicle group, and it correlated well with the infiltration of neutrophils. Administration of dl-, d-, and l-NBP (20 mg·kg-1) partially inhibited both the increase in MPO activity and the appearance of neutrophils in ischemia-reperfusion sites. Upregulation of ICAM-1 was also observed on the microvessel endothelium in the ischemic territory. In addition, chiral NBP markedly blunted ICAM-1 expression, and decreased the number of TNF-α blue purple-pos. neurons induced by ischemia-reperfusion injury. CONCLUSION: The results indicate that the increase in neutrophils infiltration into the infarct site implicated postischemic brain injury, and NBP was effective in protecting the ischemic sites following ischemic insult.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 20 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:203959 CAPLUS
DOCUMENT NUMBER: 133:83680
TITLE: 3-n-Butylphthalide: cerebral antiischemic
AUTHOR(S): Wang, Xing-Wang
CORPORATE SOURCE: Shanghai Institute of Cell Biology, Chinese Academy of Sciences, Shanghai, 200031, Peop. Rep. China
SOURCE: Drugs of the Future (2000), 25(1), 16-23
CODEN: DRFUD4; ISSN: 0377-8282
PUBLISHER: Prous Science
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 34 refs., describing synthesis, source and chemical, pharmacol. actions, mol. mechanisms, pharmacokinetics, and toxicity of the cerebral antiischemic drug 3-n-butylphthalide.
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 21 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:758599 CAPLUS
DOCUMENT NUMBER: 132:274163
TITLE: Effects of 3-n-butylphthalide on release of glutamate and 5-HT from cultured neurons subjected to hypoglycemia/hypoxia
AUTHOR(S): Chong, Zhaozhong; Feng, Yipu

CORPORATE SOURCE: Institute of Material Medica, Chinese Academy of Medical Sciences, Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaoxue Zazhi (Beijing) (1999), 34(9), 589-591
CODEN: ZYZAEU; ISSN: 1001-2494
PUBLISHER: Zhongguo Yaoxuehui
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of dl-3-n-butylphthalide (dl-NBP), d-NBP and l-NBP on the release of glutamate and 5-hydroxytryptamine (5-HT) from cultured perinatal cortical neurons were studied. The cortical neurons were cultured with medium containing low glucose and bubbled with N2, glutamate and 5-HT were determined fluorometrically. The results showed that dl-NBP (1 and 10 μmol L-1) and l-NBP (10 μmol L-1) reduced the glutamate release and the release of 5-HT from cultured cortical neurons induced by hypoglycemia/hypoxia for 10 h. D-NBP had no significant effect. dl-NBP and l-NBP also decreased the glutamate release induced by arachidonic acid (100 μmol L-1). The inhibitory effects of NBP on the release of glutamate and 5-HT might be one of its action mechanisms in the treatment of cerebral ischemia.

L7 ANSWER 22 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:703503 CAPLUS
DOCUMENT NUMBER: 132:18731
TITLE: NBPA: a cerebral ischemic protective agent
AUTHOR(S): Zhang, Juntian; Peng, Xinqi; Wei, Guo; Su, Dan
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Beijing Union Medical College, Beijing, Peop. Rep. China
SOURCE: Clinical and Experimental Pharmacology and Physiology (1999), 26(10), 845-846
CODEN: CEXPB9; ISSN: 0305-1870
PUBLISHER: Blackwell Science Asia Pty Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB NBPA is a derivative of 3-n-butylpathalide isolated from Apium granolens Linn. At concns. ranging from 6 + 10-6 to 10-6 mol/L, NBPA inhibited the L-type calcium current in guinea-pig myocardial cells and cultured human neuroblastoma cells. At 10-6 mol/L, NBPA markedly inhibited calcium-dependent and -independent release of glutamate from synaptosomes. The [31P] NMR spectrum has shown that pretreatment with NBPA at 15 mg/kg, i.p., improved energy metabolism In situ hybridization has shown that 10 and 20 mg/kg, i.p., NBPA prior to cerebral artery occlusion can accelerate the expression of heat shock protein 70 mRNA and inhibit c-fos mRNA expression. It has been shown that NBPA decreases the nitric oxide content and bc nitric oxide synthase (NOS) activity in the global cerebral ischemia-reperfusion model in rats. In addition, it has been shown that NBPA significantly inhibits the expression of inducible NOS protein.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 23 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:581193 CAPLUS
DOCUMENT NUMBER: 132:131676
TITLE: Effect of dl-3-n-butylphthalide on activity of choline acetyltransferase in ischemic brain and cultured neurons subjected to hypoglycemia/hypoxia
AUTHOR(S): Chong, Zhaozhong; Feng, Yipu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaoxue Zazhi (Beijing) (1999), 34(8), 519-522
CODEN: ZYZAEU; ISSN: 1001-2494
PUBLISHER: Zhongguo Yaoxuehui

DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of dl-3-n-butylphthalide (dl-NBP), d-NBP and l-NBP on the activity of choline acetyltransferase (ChAT) in ischemic brain and cultured neurons subjected to hypoglycemia/hypoxia were studied by examining the activity of ChAT with spectrophotometry. The activity of ChAT was decreased by 61.3% and 58.4%, resp., in cerebral cortex and striatum after 6 h of blockade of the origin of middle cerebral artery. dl-NBP, d-NBP and l-NBP increased ChAT activity in ischemic brain and improved ChAT activity in cultured perinatal rat cortical neurons subjected to hypoglycemia/hypoxia or NMDA treatment. The results showed that the effect of dl-NBP on learning and memory function impaired by focal cerebral ischemia may be related to its protective effect on the activity of choline acetyltransferase.

L7 ANSWER 24 OF 62 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:522936 CAPLUS
DOCUMENT NUMBER: 131:281379
TITLE: dl-3-n-butylphthalide attenuates reperfusion-induced blood-brain barrier damage after focal cerebral ischemia in rats
AUTHOR(S): Chong, Zhao-Zhong; Feng, Yi-Pu
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Zhongguo Yaoli Xuebao (1999), 20(8), 696-700
CODEN: CYLPDN; ISSN: 0253-9756
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To study the protective effect of dl-3-n-butylphthalide (NBP) on blood-brain barrier (BBB) damage induced by reperfusion following focal cerebral ischemia. Focal cerebral ischemia in rats was performed by inserting a nylon suture into intracranial segment of internal carotid artery to block the origin of middle cerebral artery and reperfusion by withdrawing the nylon suture. Permeability of BBB was determined by extravasation of the protein-bound Evans blue dye to cerebral cortex and further evaluated by immunohistochem. or electronmicroscopic method. Reperfusion for 3 h following focal cerebral ischemia for 3 h produced BBB damage which exhibited the increase in extravasation in cerebral cortex, elevation of the expression of Ig (IgG), and pore formation in endothelial cell membrane of capillary in cerebral cortex. NBP (5-20 mg · kg-1) decreased the extravasation in a dose-dependent manner. The expression of IgG in cerebral cortex was decreased and the ultrastructure damage of capillaries was alleviated after treatment with NBP. NBP 20 mg·kg-1 also alleviated brain edema caused by 3-h reperfusion following 3-h middle cerebral artery occlusion (MCAO). NBP has protective effect on BBB damage induced by reperfusion after MCAO.
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:446721 CAPLUS
DOCUMENT NUMBER: 122:178384
TITLE: Butylphthalide, sedanolide, sedanenolide, and related compounds as therapeutic agents for treatment of inflammation
INVENTOR(S): Daunter, Brian
PATENT ASSIGNEE(S): Moebius Consultancy Pty. Ltd., Australia
SOURCE: PCT Int. Appl., 92 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9500157	A1	19950105	WO 1994-AU342	19940624
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2165794	A1	19950105	CA 1994-2165794	19940624
AU 9469910	A	19950117	AU 1994-69910	19940624
AU 691815	B2	19980528		
ZA 9404568	A	19950320	ZA 1994-4568	19940624
EP 708651	A1	19960501	EP 1994-918690	19940624
EP 708651	B1	19991020		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
CN 1129908	A	19960828	CN 1994-193176	19940624
IN 178310	A1	19970322	IN 1994-CA492	19940624
JP 09505024	T	19970520	JP 1994-522513	19940624
AT 185698	T	19991115	AT 1994-918690	19940624
ES 2140541	T3	20000301	ES 1994-918690	19940624

PRIORITY APPLN. INFO.: AU 1993-9605 A 19930625
WO 1994-AU342 W 19940624

OTHER SOURCE(S): MARPAT 122:178384

AB A method for the treatment of an inflammatory complaint includes administration of the title compds. (12 Markush structures given) or mixts. thereof. Compns. containing these compds. are also disclosed. The invention also includes within its scope plant exts. which may contain ≥1 of the above-mentioned compds., in particular plant exts. of the genus Umbelliferae, celery (Apium graveolens), parsley (Petroselinum hortense) and dill (Anethum graveolens). Its is believed that the compds. of the invention, in particular butylphthalide, sedanenolide, and sedanolide (in both cis and trans froms, otherwise known as essential oils which are mainly derived from plants) mimic the physiol. response of essential fatty acids and their prostaglandin analogs. Characterization and clin. efficacy of a plant extract are described.

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:446721 CAPLUS
DOCUMENT NUMBER: 122:178384
TITLE: Butylphthalide, sedanolide, sedanenolide, and related compounds as therapeutic agents for treatment of inflammation
INVENTOR(S): Daunter, Brian
PATENT ASSIGNEE(S): Moebius Consultancy Pty. Ltd., Australia
SOURCE: PCT Int. Appl., 92 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9500157	A1	19950105	WO 1994-AU342		19940624
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ, VN					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
CA 2165794	A1	19950105	CA 1994-2165794		19940624
AU 9469910	A	19950117	AU 1994-69910		19940624
AU 691815	B2	19980528			
ZA 9404568	A	19950320	ZA 1994-4568		19940624
EP 708651	A1	19960501	EP 1994-918690		19940624
EP 708651	B1	19991020			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE					
CN 1129908	A	19960828	CN 1994-193176		19940624
IN 178310	A1	19970322	IN 1994-CA492		19940624
JP 09505024	T	19970520	JP 1994-522513		19940624
AT 185698	T	19991115	AT 1994-918690		19940624
ES 2140541	T3	20000301	ES 1994-918690		19940624
PRIORITY APPLN. INFO.:			AU 1993-9605	A	19930625
			WO 1994-AU342	W	19940624

OTHER SOURCE(S): MARPAT 122:178384

AB A method for the treatment of an inflammatory complaint includes administration of the title compds. (12 Markush structures given) or mixts. thereof. Compns. containing these compds. are also disclosed. The invention also includes within its scope plant exts. which may contain ≥1 of the above-mentioned compds., in particular plant exts. of the genus Umbelliferae, celery (Apium graveolens), parsley (Petroselinum hortense) and dill (Anethum graveolens). Its is believed that the compds. of the invention, in particular butylphthalide, sedanenolide, and sedanolide (in both cis and trans froms, otherwise known as essential oils which are mainly derived from plants) mimic the physiol. response of essential fatty acids and their prostaglandin analogs. Characterization and clin. efficacy of a plant extract are described.

L26 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:280032 CAPLUS
DOCUMENT NUMBER: 131:139336
TITLE: Effects of 3-n-butylphthalide on pial microcirculation dysfunction in rats with focal cerebral ischemia
AUTHOR(S): Xu, Haoliang; Feng, Yipu
CORPORATE SOURCE: Institute of Material Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Yaoxue Xuebao (1999), 34(3), 172-175
CODEN: YHHPAL; ISSN: 0513-4870
PUBLISHER: Yaoxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The effects of dl-, l-, and d-3-n-butylphthalide (NBP) on pial arteriole diameter (AD) and blood flow velocity (BFV) in rats with focal cerebral ischemia were studied. The effects of dl-NBP, l-NBP and d-NBP on AD and BFV were investigated in the left middle cerebral artery occluded (L-MCAO) rats anesthetized with urethane by using the method of acute cranial window technique under in vitro videomicroscope. dl-NBP, d-NBP and l-NBP (25 mg kg-1 i.p.) and nimodipine were administered 20 min after MCAO or 1 h before MCAO. In the vehicle control group, MCAO decreased BFV and AD by 18.3% and 52% resp., compared with the pre-ischemia baseline values. In the pretreatment groups, no change in pial AD was found after dl-NBP, l-NBP, d-NBP administration in normal animals, and a rapid and marked decrease in BFV and Ad of the selected pail artery was observed within 5 min after MCAO. The decreased level of AD and BFV recovered quickly after MCAO in the dl-, l-NBP and nimodipine groups, while the dysfunction of microcirculation was exacerbated by d-NBP. In the post-treatment groups, dl-NBP (12.5, 25 mg kg-1 i.p.) induced dilation of the pial arterioles and the increase in BFV was in dose-dependent manner. The pial arteriolar response to MCAO was no affected by d-NBP and nimodipine. These data suggested that the improving effects of dl-NBP and l-NBP on microcirculation dysfunction during ischemia might play an important role in their protective effects against focal cerebral ischemia injury. L-NBP and d-NBP showed counteractive effect on pial AD and BFV in MCAO rats indicating that NBP has stereoselective characters on its protective action against cerebral ischemia injury.

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     (FILE 'HOME' ENTERED AT 04:46:53 ON 22 SEP 2007)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 04:47:44 ON 22 SEP 2007
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L2             8 S L1 AND OIL?
L3            72 S  ?BUTYLPHTHALIDE (P) OIL?
L4             6 S L3 AND DELIVER?
L5             1 S L3 AND ADMINIS?
L6            41 S L3 AND ESSENTIAL OIL?
L7             0 S L6 AND THROMBOSIS
L8             0 S L6 AND ISCH?
L9             2 S L3 AND ISCH?
L10            0 S L3 AND THROMBOSIS
L11            2 S L3 AND INFLAMMA?
L12            0 S OIL? (P) ?CYCODEXTRIN?
L13            3 S  ?BUTYLPHTHALIDE (P) BIOAVAIL?
L14            7 S  ?BUTYLPHTHALIDE (P)STABIL?
L15            3 S  ?BUTYLPHTHALIDE (P) ABSORP?
L16            0 S  ?BUTYLPHTHALIDE (P) CARRIER?
L17           16 S  ?BUTYLPHTHALIDE (P) VEHICLE?
L18            0 S  ?BUTYLPHTHALIDE (P) INTRAVENEOUS
L19           17 S  ?BUTYLPHTHALIDE (P) IV
L20            4 S  ?BUTYLPHTHALIDE (P) I.V.
L21            5 S  ?BUTYLPHTHALIDE (P)  PHARMACOKINETICS
L22            4 S  ?BUTYLPHTHALIDE (P)  THROMBOSIS
L23            0 S  ?BUTYLPHTHALIDE (P) ISCHEM-INDUCED
L24           69 S  ?BUTYLPHTHALIDE (P) ISCHEM?
L25            0 S L24 AND PATIENT?
L26           14 S L24 AND ADMINIST?
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